**SPECIAL TOOLS ISSUE**

**Capture stones in fold-over earrings** *p. 48*

# ArtJewelry®

INSPIRATION • EDUCATION • COMMUNITY

JULY 2015

## LEARN TO WEAVE WITH SILVER WIRE *p. 32*

**METAL**

**Carve your metal with file and saw** *p. 64*

## SPECIAL FOCUS: TOOLS & STUDIO

**Expand your storage options** *p. 38*

**Make your own dapping punches** *p. 52*

**Repair your kiln at home** *p. 60*

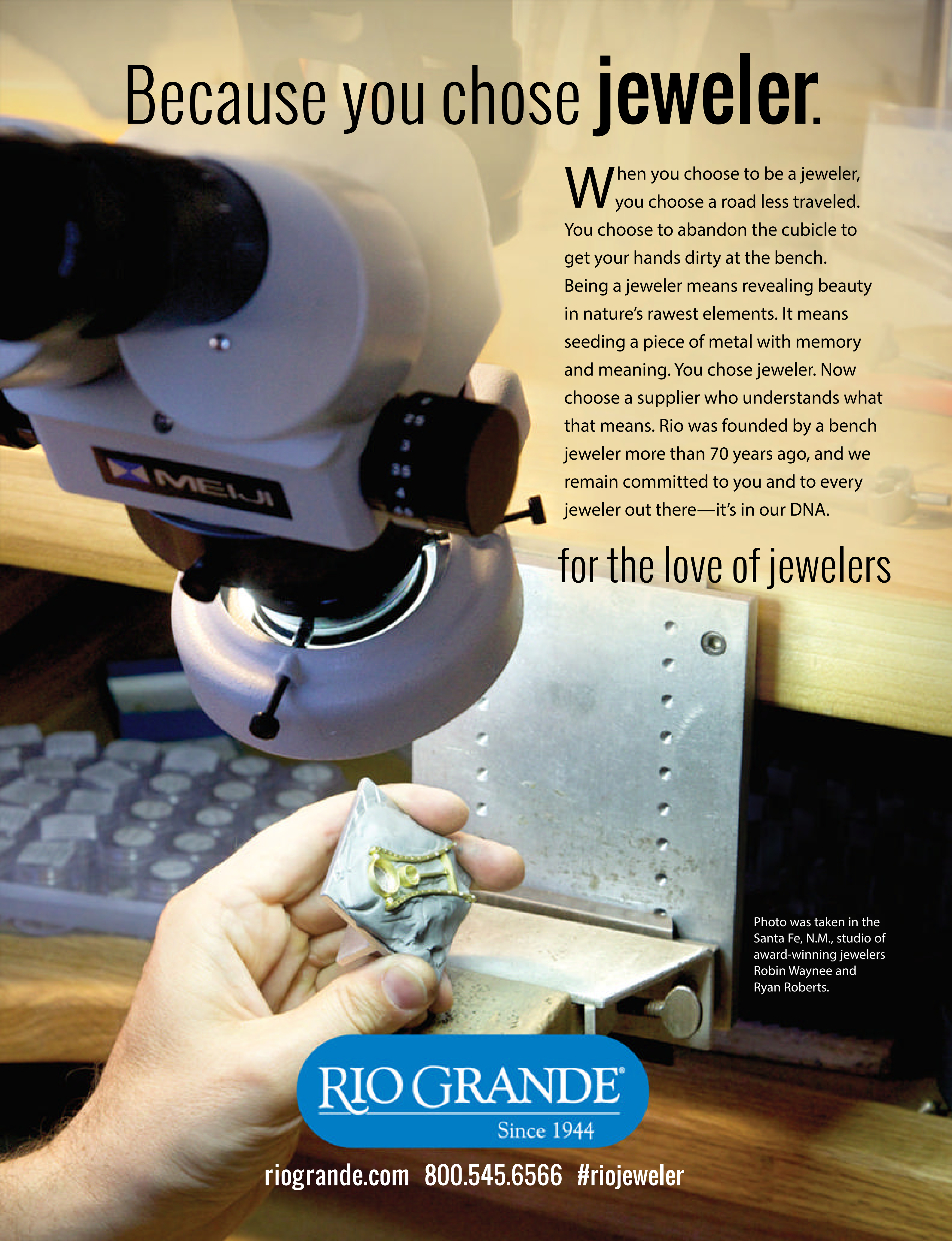
**and much more!**

**Brooch by Jeanie Pratt,** of woven sterling and fine silver, pearls, and enamel. *p. 32*

**BONUS ONLINE CONTENT CODE PG. 4**

Volume 11 • Issue 5

www.ArtJewelryMag.com



Because you chose **jeweler.**

When you choose to be a jeweler, you choose a road less traveled. You choose to abandon the cubicle to get your hands dirty at the bench. Being a jeweler means revealing beauty in nature's rawest elements. It means seeding a piece of metal with memory and meaning. You chose jeweler. Now choose a supplier who understands what that means. Rio was founded by a bench jeweler more than 70 years ago, and we remain committed to you and to every jeweler out there—it's in our DNA.

for the love of jewelers

Photo was taken in the Santa Fe, N.M., studio of award-winning jewelers Robin Waynee and Ryan Roberts.

RIO GRANDE®
Since 1944

riogrande.com 800.545.6566 #riojeweler

GWEN YOUNGBLOOD'S

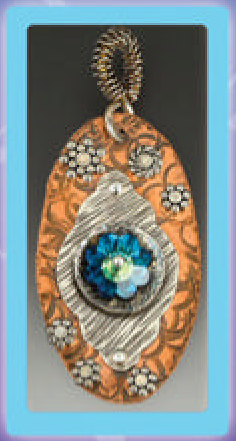
Riveting Essentials

by Wubbers

We Are On facebook Come Find Us!

*Get your Riveting Essentials today at www.WubbersUShop.com!*

- Patent Pending Measuring System
- Perfect for Setting Tube or Wire Rivets
- Attaches Bezels for Setting Stones Without Solder



Design by Gwen Youngblood

*Learn jewelry making from the best! Free tutorials at WubbersU.com*

Wubbers

. . . Made to Make Jewelry

# THIS ISSUE

July 2015

**ONLINE CONTENT CODE: ART1507**
Enter this code at: **www.ArtJewelryMag.com/code**
to gain access to web-exclusive content

## features

intermediate
**28 Metal Clay and Wire Fusion**
*Paint metal-clay paste onto a wire framework to create a lace-like effect.*
**by Valerie Preston**

STUDIO
all levels
**38 Tactics for Tool Storage: Hammers**
*Use easy-to-find hooks and clips to transform wasted studio space into an efficient tool-storage system.*
**by Michael David Sturlin with Annie Pennington**

inspiration
**46 On Trend: An Insect Obsession**
*Featured artist Jeanie Pratt has been collecting bug-themed jewelry by leading jewelry makers for years. Take a peek at some of her favorite pieces.*

intermediate
**48 Earrings: Foldover Earrings**
*Design a silver cutout to perfectly complement a custom-cut stone.*
**by Marthe Roberts/Shea**

TOOLS
all levels
**52 DIY Dapping Punches**
*Raid the hardware store for components to make your own wooden dapping punches.*
**by Julia Lowther**

52

32

## cover story

**32 Adapt Textile-weaving Techniques to Metal**
*Set a warp and weft with flattened wire, and weave your own silver fabric.*
**by Jeanie Pratt**

STUDIO
all levels
**56 Organization 101: Studio Storage Solutions**
Art Jewelry *readers share their innovative solutions to organizing tools and materials.*

TOOLS
all levels
**60 Kiln Care: How to Replace a Heating Element**
*If your kiln's gone cold, don't panic! You can get it back in working order without costly repairs.*
**by Charity Hall**

beginner/intermediate
**64 Take a Decorative Approach to Sawing & Filing**
*Use a traditional knife-making technique to add precise detail to your jewelry.*
**by Dellana**

*Art Jewelry* (USPS 022-902, ISSN 1547-2728) is published bimonthly by Kalmbach Publishing Co., 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612. Periodicals Postage is paid at Waukesha, WI and additional offices. **Postmaster:** Send address changes to *Art Jewelry*, 21027 Crossroads Circle, P.O. Box 1612, Waukesha, WI 53187-1612. Canada Post Publication Mail Agreement #40010760.

64

## in every issue

**6 From the Editor**
*Tools, and where to put them*

**9 Up Front**
- *Excursion*
- *Reader Forum*
- *Media Review*
- *Tool Reviews*
- *Workshop*
- *Reader Tip*
- *Call for Entries*

**18 Business Savvy**
*Post-show Strategies*
**by Marlene Richey**

**20 Studio Savvy**
TOOLS
*Pliers: or, How I Learned Not to Pinch My Finger*
**by Christopher C. Darway**

**24 Metalsmithing 101**
STUDIO
*Stumped! Setting up a Forming Station*
**by Michael David Sturlin**

**41 Gallery**
*A collection of cutting-edge jewelry to intrigue and inspire you.*

**82 The Back Page**
*Inspired by 18th-century portrait miniatures,* ***Jessica Calderwood*** *creates double-sided works of art that comment on modern beauty norms.*

## reference

**73 Basics**

**79 Suppliers**

48

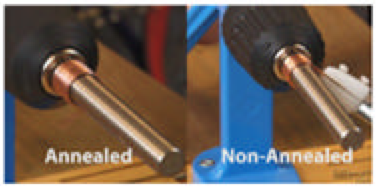
## artjewelrymag.com

*Look for this Art+ icon for subscriber-only content!*

| reference section | video section | Art+ bonus subscriber project |
|---|---|---|
| **artjewelrymag.com/reference** | **artjewelrymag.com/video** | **artjewelrymag.com/projects** |

Art+ Data Sheet: Filing. In the first of a new collection of reference articles, download a handy one-page guide to filing to keep in your studio!

Check out how Jeanie Pratt made the custom tools she uses in her wire-weaving process.



» How to coil wire

» How to cut jump rings with flush cutters

» How to cut jump rings with a jeweler's saw.

Art+ Magazine subscribers can see expanded versions of "How to cut jump rings with a jeweler's saw" and "How to coil wire," showing additional cutting and coiling methods.

TOOLS/STUDIO | **ALL LEVELS**

### Simple Tactics for Trapping Silver Dust

*Jump-ring makers throw off a lot of silver dust — make sure you don't throw it away.*

**by Laurie Jane Kern**

Visit www.artjewelrymag.com to sign up for our free bimonthly email newsletter. Be the first to know about new projects, video tutorials, design challenges, reference articles, and more!

Get free access to bonus online projects, how-to videos, handy charts, inspirational galleries, and more. Register to become a member online at www.artjewelrymag.com. It's free!

## Tools, and where to put them

There's a common affliction that shows up in chefs, carpenters, and jewelry makers — anyone who works at a craft, really. And that's tool addiction. We love our tools. Even while old-school craftspeople tell us that just a select few high-quality classics are more than sufficient, we can't resist the latest shiny thing that is just *bound* to make our lives easier!

This issue is our fourth annual Tools & Studio issue. This time out, we're taking a look at tool use, tool reviews, how to make your own tools, how to care for your equipment, and how to set up a workstation. But even with all that in the issue, we're not forgetting the dark side of tool acquisition.

Because it's not just about getting — it's about maintaining. Acquiring one more hammer isn't a big deal. But suddenly you have a load of "just one more" hammers, and some of them are getting abused and rusty. Your collection of files is growing, and half of them are dull from banging against each other in a drawer. You have an amazing array of pliers, but it's impossible to find the exact pair you want when you're faced with the jumble that they've become. What to do? Unless you want to pare down your tool collection (heaven forbid!), you're going to have to be more efficient about how you store them. In this issue, Michael David Sturlin presents a few ways to transform an overlooked empty space into a rack of easily accessible hammers ("Tactics for Tool Storage: Hammers," *page 38*). And, our readers have shared how they repurpose everything from a kitchen cart to an antique chicken feeder to create their own custom studio organization methods ("Organization 101: Studio Storage Solutions," *page 56*). Did I really say … antique chicken feeder? Yes, yes I did. Read on!

But … we're not forgetting about the dark side of tool acquisition.

Hazel Wheaton

hwheaton@artjewelrymag.com

ArtJewelry

**Editor** Hazel L. Wheaton
**Senior Art Director** Lisa A. Bergman

**Associate Editor** Annie Pennington
**Assistant Editor** Theresa D. Abelew

**Graphic Designer** Lisa M. Schroeder
**Photographer** William Zuback
**Illustrator** Kellie Jaeger

**Publisher** Linda Kast

KALMBACH PUBLISHING CO.

### Kalmbach Publishing Co.

**President** Charles R. Croft
**Vice President Editorial** Kevin P. Keefe
**Senior V.P. Sales and Marketing** Daniel R. Lance
**Vice President Consumer Marketing** Nicole McGuire
**Corporate Art Director** Maureen M. Schimmel
**Corporate Advertising Director** Ann E. Smith
**Art and Production Manager** Mike Soliday
**Production Coordinator** Jodi Jeranek
**Group Circulation Manager** Kathy Steele
**Single Copy Specialist** Kim Redmond

### Advertising

Phone: 888.558.1544 ext. 523
E-mail: adsales@artjewelrymag.com
**Advertising Manager** Jamie Rinehart
**Advertising Sales Representative** Dina Johnston
**Ad Services Representative** Nanette Hackbarth

### Contact us:

**Customer Service**
Phone: 800.533.6644
Outside the U.S. and Canada: 262.796.8776 ext. 421
Fax: 262.796.1615
E-mail: customerservice@kalmbach.com
*Please include name, address, and phone number with all correspondence.*

**Dealer Sales**
Selling *Art Jewelry* magazine or products in your store:
Phone: 800.558.1544 ext. 818
Outside the U.S. and Canada: 262.796.8776 ext. 818
Fax: 262.798.6592
E-mail: tss@kalmbach.com
Website: www.Retailers.Kalmbach.com

**Editorial**
Phone: 262.796.8776 ext. 349
E-mail: editor@artjewelrymag.com

**Books**
E-mail: books@kalmbach.com

**www.ArtJewelryMag.com**

© 2015 Kalmbach Publishing Co. All rights reserved. This publication may not be reproduced in part or in whole without written permission from the publisher. Please send editorial correspondence to: Editor, *Art Jewelry* magazine, Kalmbach Publishing Co., P.O. Box 1612, Waukesha, WI 53187-1612. We cannot assume responsibility for manuscripts or materials submitted to us. Single copy: $6.99. Subscription rate: U.S.: 1 year (6 issues) $32.95; 2 years (12 issues) $61.95; 3 years (18 issues) $87.95. Canadian: Add $8.00 postage per year. Canadian price includes GST, payable in U.S. funds. International: Add $9.00 postage per year, payable in U.S. funds, drawn on a U.S. bank. Expedited delivery service surcharges: Domestic First Class $15.00/year; Canadian Air $15.00/year; International Air $25.00/year. Printed in U.S.A.

# Tools That You Will Love

*Basic Jewelers Kit*
138.560E

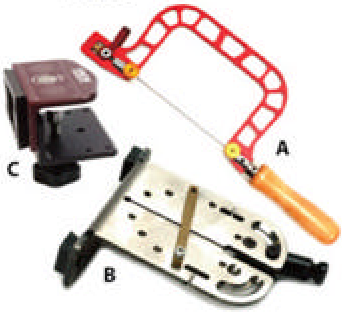
*Foredom Flex Shaft Kits*
134.204

*Fretz Tool Kits*
112.608

*Fancy Shape Disk Cutters*
125.1758

*Nechamkin Chasing Tools Set*
125.285KIT

*Silver Sheet & Wire*



*Knew Concepts Sawing Tools*

| | |
|---|---|
| A. Saw Frame | 149.673 |
| B. Bench Pin | 149.667 |
| C. Bench Clamp | 149.666 |

*New Pepe Jump Ring Maker*
143.101

*Durston Rolling Mills*
128.109X

*New Pepe Superior Ring Bending Tool*
148.045

*Swiss Torch with Hoke Head*
*114.111*

*Meco Midget Torch*
*114.160*

*Smiths Little Torch*
*114.004*

*Torches & Soldering Kits*

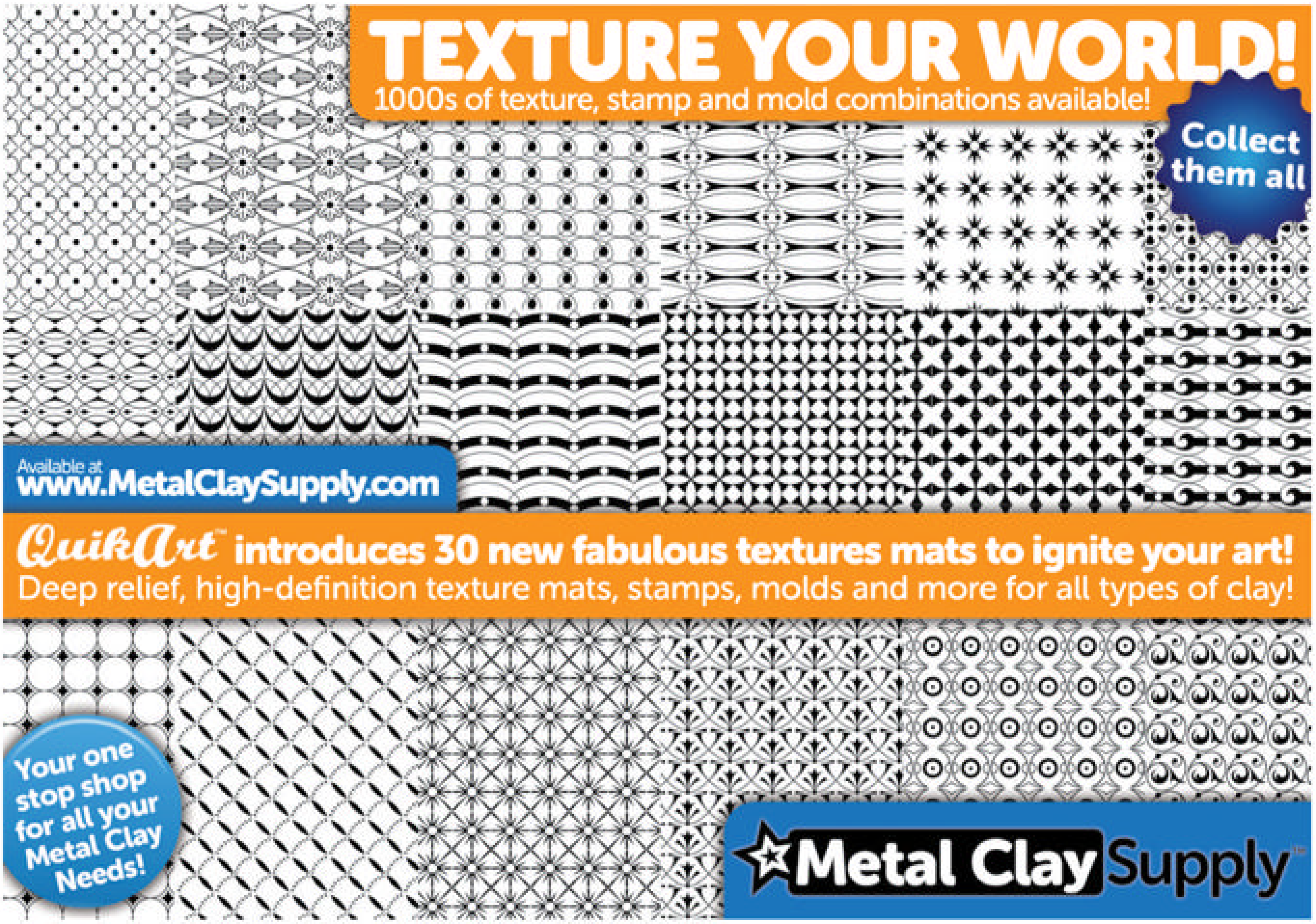
**save 5%**

**Right Now**
**Use Online Coupon Code**
**WINK**

*Expires 12/31/15*

**Shop Online & Save**
**800.772.3456**
510.832.0355
**OttoFrei.com**

Otto Frei
Quality Jewelry Tools & Findings Since 1930



TEXTURE YOUR WORLD!

1000s of texture, stamp and mold combinations available!

Collect them all

Available at
www.MetalClaySupply.com

QuikArt™ introduces 30 new fabulous textures mats to ignite your art!
Deep relief, high-definition texture mats, stamps, molds and more for all types of clay!

Your one stop shop for all your Metal Clay Needs!

Metal Clay Supply™

EFFICIENCY THROUGH DESIGN SIMPLICITY

Introducing the New
3-in-1 Concave Cutter from Busch®

with its innovative TWINCUT Blade Geometry
that allows you to shorten, round & polish all in one easy step.

Simply position the 411T and begin finishing.

TWINCUT Blade Geometry allows you to remove material quickly.

TWINCUT rounds as it shortens and polishes.

Thinner cutter walls create additional room when prongs are closely spaced.

411T

Innovative TWINCUT Blade Geometry with dual chip channels for quicker and safer removal of excess materials

In-Stock for Prompt Shipping

Busch knows how competitive the jewelry business is. That's why we are constantly researching and developing new products to help improve your manufacturing efficiency and enhance your profitability. Our new 411T is the latest in a long line of burs designed to meet the specific needs of jewelers.

- Material: Tungsten Vanadium Steel
- Range of Applications: Soft metals, gold, silver, platinum
- Shank: 2.35mm
- Recommended Speeds: 5,000 – 10,000 rpm
- Packaged: 6-per pack

*For additional information on the 411T, or the name of your nearest dealer, contact:*

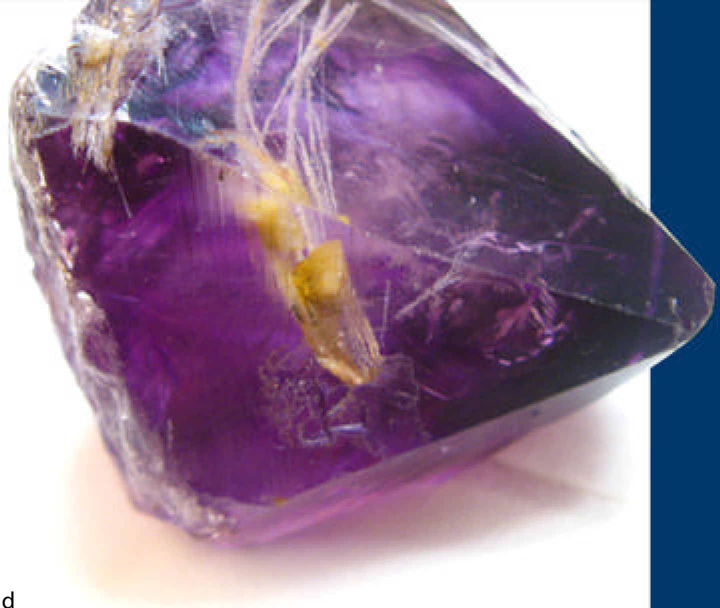
Pfingst & Company, Inc.

105 Snyder Road, South Plainfield, NJ 07080
Phone: 908-561-6400 • Fax: 908-561-3213
E-mail: pfingst.co@rcn.com • www.pfingstco.com

Busch® is a registered trademark of Pfingst & Company

EXCURSION

# Gemstone Safari: Tanzania



▲ Amethyst with a jellyfish inclusion, found in Morogoro.

**What:** Adding authentic minerals and gemstones to your jewelry is a treat, but being able to mine and cut those same stones makes for a rare and personal connection to your work. Travel to Tanzania on a customized mining adventure, and learn about the local geology while you work. At each location, a group of local miners will assist you, but all the stones you find are yours to keep. Visit the spinel and sunstone mines in Morogoro, followed by the Umba Valley gemstone mines for sapphires. Or visit the Tanzanite mines in Merelani, along with the nearby emerald and Alexandrite mines. Excursions to visit gem traders and the animal parks of Tarangire and Lake Manyara are also available. Extend your trip to visit the Winza ruby mines and more mines near Morogoro, or stay to learn how to cut your newfound gems at the fully-equipped Lapidary Training Centre Ltd. This exciting program has been organized by Nakara Matemu, a Tanzanian geologist; Hubert Heldner, a Swiss jeweler; and Noreen Masaki, a Tanzanian lapidary instructor.

**When:** July 13–30, 2015 and January 4–21, 2016

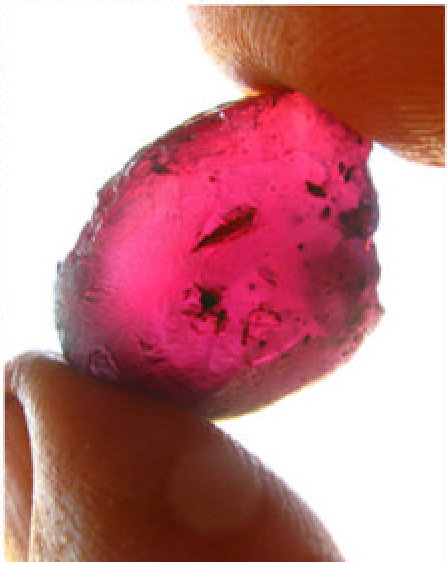
**Where:** Dar Es Salaam, Tanzania

**For more information:** www.free-form.ch/tanzania/index.html

▼ Sorting gem gravel in the Umba Valley mines.

◀ A lion at Lake Manyara National Park, one of the optional excursions

▼ Michel Gratier on a mine dump (or "tailings," the minerals and other scrap left after the desired materials have been extracted) at Merelani. All photos by Noreen Masaki.



◀ Garnet found in the Umba Valley

IN THIS SECTION

EXCURSION
READER FORUM
MEDIA REVIEW
TOOL REVIEWS
WORKSHOP
READER TIP
CALL FOR ENTRIES

## READER FORUM

### Kudos

I have been making glass earrings and pendants for 20 years now. I wanted to let you know that I love your magazine. Your articles have helped me figure out new designs and have made my work look better. Keep up the great work! I also wanted to let you know that I have a great shot of your November 2014 magazine on my website, hope that's OK!

*— Allan Varey*
*Via email*

***Editor Hazel Wheaton responds:*** *Thanks so much for your kind words about the magazine; I'm glad that you have been enjoying it! We often get questions about what's permissible in photographing, displaying, or posting images of the magazine. As far as we're concerned, a photo that shows the* Art Jewelry *cover in the background is wonderful! It just shows to your audience that you have great taste in magazines, and it gives us a bit of exposure. The only times in the past that we've taken issue with artists posting images of our cover is when they've altered or distorted the cover image in ways that is not in keeping with the magazine's identity, or is intended to be deceptive.*

### In Search of …

I'm working on a variation of your "Etched-copper Flower Brooch" [*Essential Techniques: Making Metal Jewelry*, page 61]. I can't locate Press-n-Peel paper. I bought matte white sticker paper instead. Which works, except the paper does not lift off easily, and it leaves a gooey residue on the metal that is difficult to clean off. Can you tell me where I can find the Press-n-Peel paper instead?

*— Judy Upton*
*via email*

***Associate Editor Annie Pennington responds:*** *That's a great project! The paper is originally for use as a resist for etching circuit boards, so you may be able to find some at local electronics stores — I'd recommend calling the store before you visit. There are also*

*continued on page 12*

## MEDIA REVIEW

### Enameling on Silver Clay 2-DVD Set

With its running time at around four hours, I was a bit intimidated by this DVD set. I thought either I'd be way out of my comfort zone with technical jargon flying over my head, or it would be too slow-paced, and I'd lose interest. Happily, I was wrong on both accounts. Pam East's personality is instantly engaging, and she keep things fast-paced and light during the duration of the video.

This was much more than just an enameling how-to. In the DVD set I watched (she also has an Enameling on Copper Clay DVD duo available), East walks you through the entire process of creating three different projects out of fine-silver metal clay. Each project is a little more difficult than the last, keeping the at-home student challenged, but not overwhelmed. There are loads of helpful tips and tricks throughout the DVDs, and not just about the materials; she even covers how to care for and customize your kiln.

With all its in-depth instruction, this DVD felt more like an exclusive private workshop, but with the bonus of learning and working around my schedule and in my own studio. *—Theresa D. Abelew*

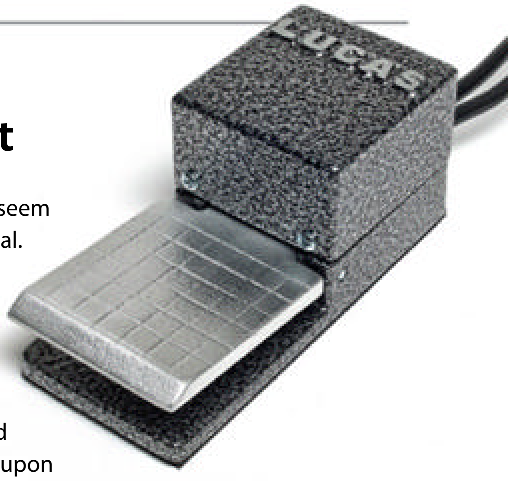
**WHERE TO BUY**

**Enameling on Silver Clay 2-DVD Set**
**Enameling on Copper Clay 2-DVD Set**
By Pam East
Pam East Productions, 2014
Starting at $44.95
ISBN 978-0-9705478-3-5 (silver clay set);
ISBN 978-0-9705478-4-2 (copper clay set)
www.pameast.net/videos

---

## TOOL REVIEW

### Lucas LowBoy Rheostat



When it comes to flex-shaft attachments, it may seem to be difficult to get worked up about a foot pedal. Sure, it's necessary to the system, but compared with all the bits and buffs, it's not exactly … sexy, you know? And at first glance, the Lucas LowBoy doesn't change this; its squat profile is as far from sexy as a designer could get.

However, working with the LowBoy reminded me of an old movie in which an executive struck upon the hot new trend in advertising: plain truth. The slogan he devised for Volvo? "Boxy, but good."

The LowBoy? Boxy, but *extremely* good. It's responsive without being oversensitive, which means it's easy to hit the speed you want and stay there. The LowBoy is remarkable for being *un*remarkable; maintaining speed becomes a no-brainer, allowing you to focus on what those sexy attachments are doing. After trying the LowBoy on our studio flex shaft, the *Art Jewelry* staff promptly ordered them for their personal machines. *—Hazel L. Wheaton*

**WHERE TO BUY**

**Lucas LowBoy #9 Rheostat**
$59.90
Lucas Dental, the manufacturer, sells only through their shop on eBay. Search for **lucadent-18** on www.ebay.com.

WORKSHOP

# Mokume Gane

***What:*** Join master goldsmith Georg Schulte from Münster, Germany, for a five-day mokume-gane workshop in the small, car-free village of Braunwald, Switzerland. Learn about this 3,000-year-old Japanese metalwork technique while surrounded by the breathtaking views from a Swiss mountain village. Students will learn how to weld thin sheets of copper alloy, silver, palladium, and gold into layered ingots. Then, the students will forge, engrave, and roll the ingots to produce the distinctive "wood grain" (mokume) patterns. After class, students can further refine the layered billets and ring blanks into finished jewelry pieces.

***When:*** August 30–September 4, 2015 or September 6–11, 2015

***Where:*** Braunwald, Switzerland

***For more information:*** www.stuessi.de

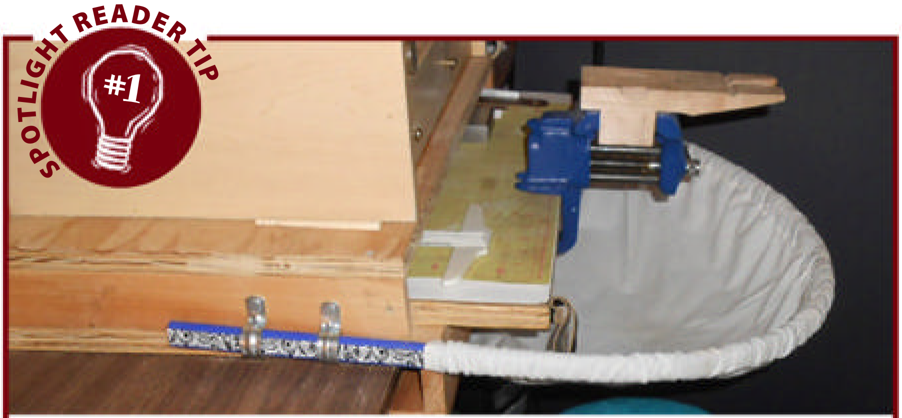
▲ **A silver-and-copper mokume-gane vessel by instructor Georg Schulte; gold-plated interior. 80 x 55 mm ($3\frac{3}{16}$ x $2\frac{3}{16}$ in.)** Photo by Georg Schulte.

▶ **This jaw-dropping mountain view showcases the front of the house where the summer workshops have been held since 1988.**

Photo by Felix Stüssi.

SPOTLIGHT READER TIP

#1



## Hula-hoop catch

If you don't have something to catch what falls from your bench while you're working — improvise! I cut a hula-hoop in half, and then threaded it through a half-circle of fabric on which I had sewn a pocket around the outer circular edge. I use conduit clamps on the sides of my bench to hold the hula-hoop in place.

— *Peggy Haupt, Gatlinburg, Tenn.*

**We're looking for your best studio tips and tricks! We've made it easy to submit your ideas — go to www.artjewelrymag.com/TipsFromOurReaders and share your tips with us. We'll choose a new spotlight reader tip for each issue; If your tip is chosen, you'll receive a $100 gift certificate courtesy of our Tip sponsor, Contenti (www.contenti.com)!**

**Contenti**

coming in the September 2015 issue

MAKE JEWELRY THAT *moves!*

PROJECTS, TECHNIQUES, AND INSPIRATIONAL PIECES THAT CELEBRATE KINETICS.

Copper and silver chain by Laura Elizabeth Mullen.

## READER FORUM

*continued from page 10*

*online sources for Press-n-Peel paper.*

*If you'd like to order 20 or more sheets, you can contact the company that makes/distributes it, Techniks (www.techniks.com). Individual sheets can be found at Rings & Things (www.rings-things.com), and are listed under "Press-n-Peel Blue Transfer Film." There are also a number of sellers on eBay (www.ebay.com) who sell individual sheets. Just search for "Press-n-Peel."*

*I hope these sources help. Let us know if there's anything else we can do to help. If you're willing to share, we'd love to see your take on the "Etched-copper Flower Brooch" when you finish!*

Art Jewelry's *124-page deluxe special issue,* Essential Techniques: Making Metal Jewelry, *is available through our online store at www.artjewelrymag.com/MakingMetalJewelry.*

### Correction

In the May 2015 issue, under Contacts & Suppliers (*page 79*), the supplier for the article "Make a Master ... Make a Mold ... Make a Model" was incorrectly listed. The supplier's name is FDJ On Time, and they can be found at www.fdjtool.com. *Art Jewelry* regrets the error and any inconvenience caused to FDJ On Time or our readers.

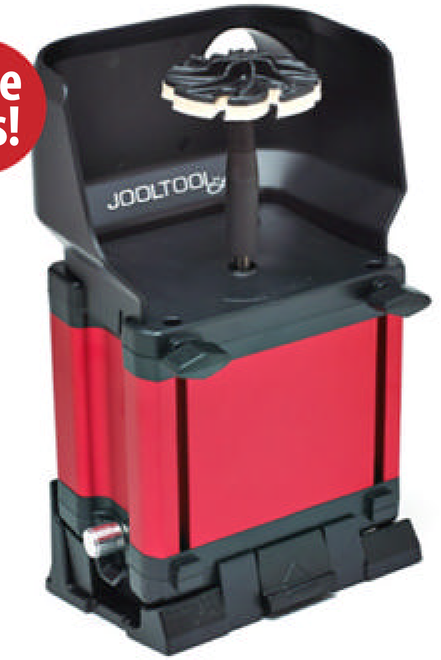
## tell us what you think!

*Send your questions, comments, and tips via email to* ***editor@artjewelrymag.com****. Letters may be edited for clarity and length.*

### TOOL REVIEW

# JoolTool

**Love this!**



Imagine an inverted buffing wheel with the spindle pointing up (or, for you lapidaries out there, a split lap). Then, picture it with the ability to be used vertically, horizontally, or handheld, and available with a ton of accessories, including an optional flex shaft. Well, that's what the JoolTool brings to the table.

Detailing all the things it can do could fill several pages; here's an abbreviated list:

- Can be used vertically or horizontally
- The plastic hood is removable.
- A retractable handle allows you to carry it and use it as a handheld polisher.
- Hidden storage tray on the bottom of the body can attach to the front for use as a water container for lapidary work
- Variable-speed knob; can adjust the speed based on the abrasive you're using
- Optional flex-shaft attachment (the spindle is removable, and the flex shaft hub attaches to the motor shaft)
- Optional tool rest for sharpening chisels and drill bits (this was my least favorite part; it's plastic, and while it worked, I'm skeptical about its long-term durability)
- A wide variety of proprietary (but quite pricey) accessories, abrasives, and buffing wheels that will help you polish fine jewelry or shine up your car's hubcaps!

The die-cut, adhesive-backed 3M abrasives and felt pads mount individually onto ninja-throwing-star-shaped backpads that you then mount abrasive-side-down on the spindle. Because the abrasives and backpads are slotted, the disk seems transparent as it's spinning, giving you a clear view of what you're working on. (Make sure to get a backpad for each abrasive; one drawback is that the abrasives are single use and can't be reused if removed.)

In addition to seeing how the JoolTool worked on jewelry (it worked great!), I polished some of the *Art Jewelry* studio's hammers, as well as a couple from my personal collection. (They needed a little love!) Because I tested it at my personal studio, I used the rubber pads on the bottom of the base rather than screwing it to the worktable. Take my word for it: Screw yours down. Part of the frustration I felt was because the machine kept shifting. I eventually added a C-clamp, which made the experience much more pleasant.

Working on the underside of the spinning disk took some getting used to (user error). I kept trying to put the backpads on the spindle upside-down (luckily, the holes are tapered to match the spindle), and I did occasionally touch what I was sanding to the top of the disk. But once I adjusted to the new way of working, the vertical setup was easy to use.

## WHERE TO BUY

**Jool Tool**
Polishing kit for metal $399.99
Angle-Master tool rest $49.99
JoolTool Flexshaft $39.99
#30 adjustable-jaw handpiece $79.99
Flex-shaft drilling kit $99.95
Jool Tool, www.jooltool.com

The abrasives I tested were 120-grit ceramic, a fine Scratch Eraser disk, a 1µ radial-bristle disk, and a felt disk and cotton buffing wheel with ultra-fine white polishing compound. I started with the ceramic disk, and worked my way through the various abrasives to bring the hammers to a mirror finish. I rotated the machine to use it horizontally with the radial-bristle disk and buffing wheel. At the end of the day, I had successfully polished a number of jewelry pieces and gotten some hammers into better-than-factory condition.

The kit I tested gave me an idea of what the tool is capable of (a lot!), but I'd prefer a wider range of abrasive grits. For what I needed it to do (remove small scratches in hammers and non-ferrous metal), the 120-grit disk was far too coarse, and while the eraser disk did eventually remove the scratches left from the ceramic disk, it took too long; additional grades of abrasives would have been more efficient. But, that's just one kit, and it may be exactly what you need. Check out their other kits (polymer clay, lapidary, sharpening, etc.), or put together your own.

If you are looking to invest in an all-in-one tool that may, for the most part, replace your bench lathe, flex shaft, and bench grinder, then the JoolTool will fit right in at your studio. —*Annie Pennington*

## CALL FOR ENTRIES

# International Pearl Design Competition, Sixth Edition: 2015–2016

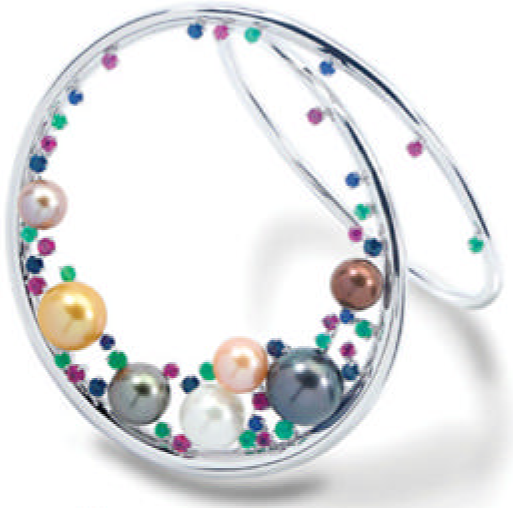
***What:*** The Cultured Pearl Association of America (CPAA) is sponsoring the International Pearl Design Competition. Artists may enter up to five different pearl designs; each entry can include five different digital images and/or hand renderings. The actual piece of jewelry does not have to be made for submission; only the winners of each category will be asked to make their piece for exhibition. All entries are considered eligible for any of the awards being given.

Each entrant will receive a one-year membership as a Designer member in the CPAA (a $500 value). Collaborative pieces are permitted, and a CPAA membership would be given to each artist. Winners will be announced on November 2, 2015. Winning entries receive a personalized award, recognition in worldwide press releases, and their piece will be on display during the AGTA and JCK shows in 2016.

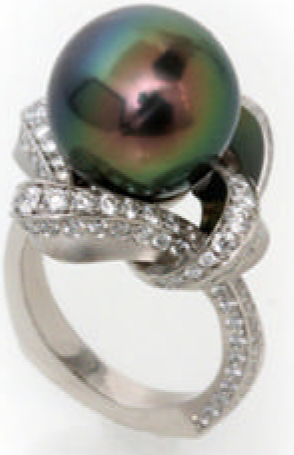
***Where:*** Enter online

***When:*** Entries accepted June 1–September 17, 2015

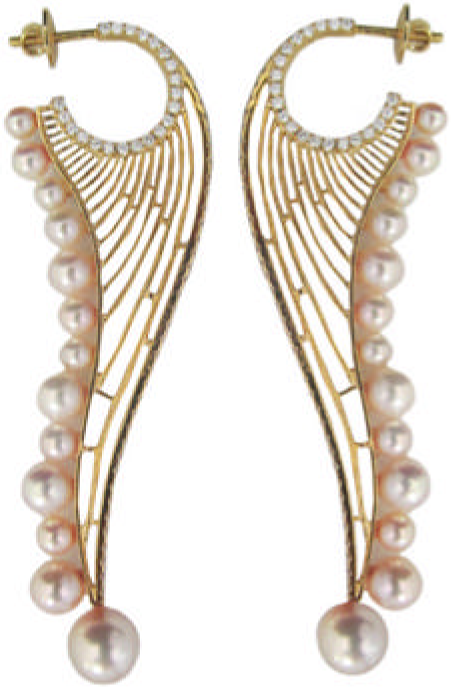
***For more information:*** www.cpaa.org



**▲ *Seven Wonders* bracelet by Bimal Koley of Dubai, UAE, won both the 2014–2015 Designers Award and the Presidents Award. The Designers Award is given to the entry that displays the most imaginative use of pearls. The Presidents Award is awarded if the judges unanimously rate a design as the best of the best.**



**▲ For his *Nautical Pearl Ring,* Mark Schneider of Long Beach, Cal., won the 2014–2015 Luster Award. This award recognizes a piece that will have the most overall appeal for the retail marketplace.**



**◀ *Leaf Walk* earrings, by Murugesh Manickam, won the 2014–2015 Fashion Award. This award is given to a modern, fresh design; one that might be at home on a Paris runway.**

All photos courtesy of Cultured Pearl Association Of America.

Our Classes & Workshop Section
IS PROUDLY SPONSORED BY:

Otto Frei
Quality Jewelry Tools & Findings Since 1930

See our Coupon Code on Page 7

*Students:* Get the best deals on *Jewelry Tool Kits. Visit OttoFrei.com*

*Instructors:* We will make custom kits just for you! *Write us at OttoFrei.com*

TERRI McCARTHY STUDIOS
Beginning & Intermediate Jewelry Classes

- All ability levels welcome
- Advanced weekend workshops
- Internationally known visiting faculty

262-375-2270
www.terrimccarthystudios.net
Grafton, WI

SILVERA
Jewelry School

**Artful Jewelry**
with guest instructor
Jesse Bert

Hydraulic press, belt buckles
& contemporary heirlooms

4 workshops ::
October 3 - 12, 2015

Berkeley, CA :: SilveraJewelrySchool.com

REVERE ACADEMY of JEWELRY ARTS
San Francisco

- JEWELRY MAKING
- STONE SETTING
- WAX CARVING
- METALSMITHING
- GEMOLOGY
- DESIGN
- CASTING
- REPAIR

PROFESSIONAL TRAINING FOR EVERYONE
www.revereacademy.com

THE FOLK SCHOOL
CHANGES YOU.

Engaging hands and hearts since 1925.
Come enjoy making crafts and good
friends on 300 natural, scenic acres
in western North Carolina.

JOHN C. CAMPBELL FOLK SCHOOL
folkschool.org 1-800-FOLK-SCH
BRASSTOWN NORTH CAROLINA

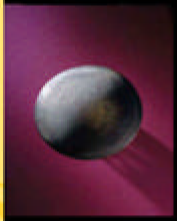
Mendocino Art Center

*Retreat... Create... Rejuvenate on the Northern California Coast*

UPCOMING CLASSES

Betty Helen Longhi

Harold O'Connor



Sandra Enterline

**BETTY HELEN LONGHI**
Creative Metal Forming

**HAROLD O'CONNOR**
Bringing the Surface to Life – Surface Embellishment

**SANDRA ENTERLINE & VALERIE MITCHELL**
Creating Volume: Forming and Electroforming

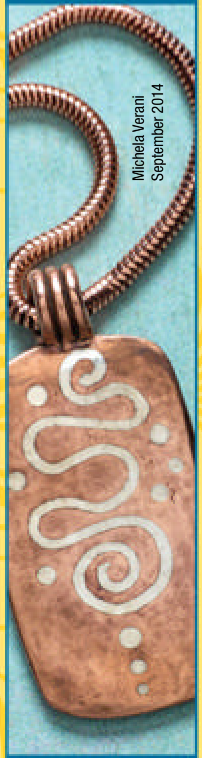
**ANDREA KENNINGTON**
100 Ways to Texture Metal

**JEANIE PRATT**
Designs in Woven Metal

**MARILYN & JACK da SILVA**
Forming a Personal Narrative in Metal

More than 30 creative classes annually!

707 937-5818 • 800 653-3328
MendocinoArtCenter.org/jewelry



TO ADVERTISE
Call 888-558-1544, ext. 523

# Your most important tools aren't in a box.

Between a jewelry designer's imagination and the final piece of work lies an entire production process filled with creativity, technique and skill.

Let GIA's Jewelry Manufacturing Arts curriculum take you from idea to reality, as you learn under the watchful eyes of highly skilled craftsmen who share their passion and expertise. Working in state-of-the-art classrooms at your own fully equipped workbench, you'll learn time-tested techniques and the newest technology – and earn a professional credential that's recognized worldwide.

Enroll in a program or just a single class to meet your specific needs and interests.

## JEWELRY MANUFACTURING ARTS PROGRAMS AND COURSES INCLUDE:

- GRADUATE JEWELER
- JEWELRY DESIGN
- COMPREHENSIVE CAD/CAM
- BASIC REPAIR AND SETTING
- INTERMEDIATE REPAIR AND SETTING
- ADVANCED STONE SETTING

Bangle, Courtesy of BELLARI, Earrings Courtesy YVEL

GIA®

Learn from the World's Foremost
Authority in Gemology™

Get started today, or learn more by visiting www.gia.edu, or call us at 800 421 7250, ext 4001.

## William Holland
School of Lapidary Arts

**2015 Schedule**
April – November

Located in North Georgia mountains!

**Classes available in:**

- Silver
- Gold
- Casting
- Faceting
- Lampworking
- Wirecraft
- Beading
- Cabochons
- Opals
- Chain Making
- Scrimshaw
- Glass Fusing
- Gem and Mineral ID

Web site: **www.lapidaryschool.org**

Phone: (706) 379-2126 • E-mail: office@williamhollandschool.com
P.O. Box 980 • Young Harris, GA 30582

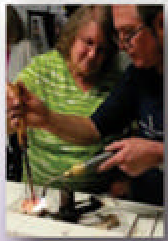
---

creative side | JEWELRY ACADEMY OF AUSTIN

BEGINNER AND MASTER COURSES OFFERED YEAR-ROUND

AUSTIN, TEXAS - WWW.CREATIVESIDE.ORG
INFO@CREATIVESIDE.ORG - 512.799.0731

---



## Studio JSD

Metalsmithing Classes
Jewelry Gallery
Visiting Artist
Workshops

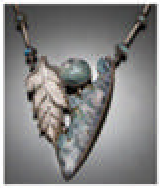
*Students at Studio JSD are encouraged to develop their unique style as they learn fundamentals in jewelry fabrication. Schedules include multi-week class sessions, studio intensives and technical workshops.*

Grand Haven, Michigan www.studiojsd.com
616-607-2470

---

Intensive small beginning through advanced year round jewelry workshops

## TAOS SCHOOL OF METALSMITHING & LAPIDARY DESIGN



**Concentrating on:** Soldering, Stone Setting, Texturing, Polishing, Forming and Lapidary. **Specialty classes** in Ring, Earring, Necklace, Mechanisms and Bracelet Design.

Contact Marilynn Nicholson
PO Box 3005 Taos, New Mexico 87571 • 575-758-0207
e-mail: taosjewelryschool@msn.com
Web: taosjewelryschool.com

---

PARIS JUNIOR COLLEGE

## TEXAS INSTITUTE
OF JEWELRY TECHNOLOGY

**Certificates & Degrees**
**Gemology • Horology • CAD/CAM**
**Fabrication • Jewelry Technology**
Since 1942
**903-782-0380 | www.parisjc.edu | tijt@parisjc.edu**

---

DROUHARD NATIONAL JEWELERS' SCHOOL

NEW

## 3 DAY WEEKEND COURSES

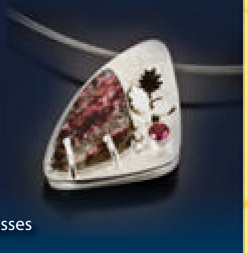
1. REPAIR
2. SETTING
3. CASTING

888-663-9335
MANSFIELD, OH
OH reg. #96-04-1443T
DROUHARDJEWELERSCHOOL.COM

---

## Elentari Håndverk
www.elentari-handverk.com

Introductory to advanced jewelry instruction



Fabrication
Soldering
Chainmaking
Metal Clay and Certification courses
Enameling
Stone Setting

Specializing in small classes and individual lessons

Debra Carus | Portland, Oregon | (971) 221-8151

---

## ADVERTISE WITH US!

10 GREAT TIPS FOR SPICING UP PLAIN BEZELS
Art Jewelry
TOP ARTISTS CREATE Modern Iron Age Artifacts

To place your ad in *Art Jewelry* -
**Call Today!**
**888-558-1544 ext. 523**

---

G&LW INC.

## "Business to Business" Gem, Jewelry & Lapidary Trade Shows

## 2015

Asheville, NC..................January 6-7
Orlando, FL..............January 9-10-11
Tucson, AZ.................Jan. 31-Feb. 13

**Tucson GEM MALL**
*January 31 - February 13*

**HOLIDOME**
New Dates & Location
*January 31 - February 8*

Minneapolis, MN.............April 12-13
Livonia (Detroit), MI....April 17-18-19
West Springfield, MA........April 24-25
Orlando, FL.........................May 1-2-3
Franklin, NC....................May 8-9-10
Livonia (Detroit), MI.....July 10-11-12
Franklin, NC...........July 23-24-25-26
Spruce Pine, NC......July 30-31-Aug. 1-2
Tucson, AZ....September 10-11-12-13
Minneapolis, MN....September 27-28
Livonia (Detroit), MI.....October 2-3-4
West Springfield, MA..........Oct. 9-10
Asheville, NC...............October 20-21
Orlando, FL...........October 23-24-25

Dates Subject to Change

**Wholesale Only**
**Registration & Proof of Business Required**

Gem & Lapidary Wholesalers, Inc.
859 Petrified Forest Rd.
P.O. Box 98 Flora, MS 39071
Phone 601.879.8832 | Fax 601.879.3282
E-mail info@glwshows.com
Website glwshows.com

Weave Got Maille

Check out our new plier line. Tailor made for Chain Maille!

Available in Chain Nose or Flat Nose!

Find us on Etsy at Weave Got Maille Etsy
www.weavegotmaille.com

**BIG CATALOG. MAXIMUM SERVICE. MINIMUM ORDER $50.**

*Send $10 (refundable with first order) for EFC catalog featuring over 20,000 styles.*
MasterCard, VISA & DiscoverCard accepted

EVERYTHING YOU'LL NEED IS AT
**EASTERN FINDINGS**

- CHARMS
- BAR PINS
- CLASPS
- EAR CLIPS
- BEADS
- FILIGREE
- KEYCHAINS
- NECK CHAINS
- BARRETTES
- PLIERS
- SOLDER
- CAPS
- SUPPLIES
- HOOPS
- BELT HOOKS
- TIE TACKS
- SCREW EYES
- NECK BANDS
- PIERCED POST
- CLIPS & WIRE
- MONEY CLIPS
- SETTINGS

NEW! Over 217 pages

**EASTERN FINDINGS CORP.**
116 County Courthouse Road, Dept. AJ4
Garden City Park, New York 11040
Order by Mail or Call: **1-800-EFC-6640**
Tel: 516-747-6640 • ***www.EasternFindings.com***
Fax: 516-747-6650 • ***sales@EasternFindings.com***

ArtTECH
***ESTABLISHED 1983***

*Personalized service and innovative techniques, enable us to produce your designs with truly superior quality in both precious and non-precious metals.*

*A synergy of old world craftsmanship and state of the art technology makes Arttech Co. the best choice for the finest quality in casting and manufacturing of your designs in Gold, Silver, Platinum, Palladium, Bronze, Aluminum, Nickel Silver, Stainless Steel and more...*

*Services include: CAD design, prototyping mold making, CNC cutting/stamping & casting.*

*We invite you to contact us for a friendly, free expert consultation.*

*1-800-418-9970*
*www.arttech.org*
*arttechcastingco@gmail.com*

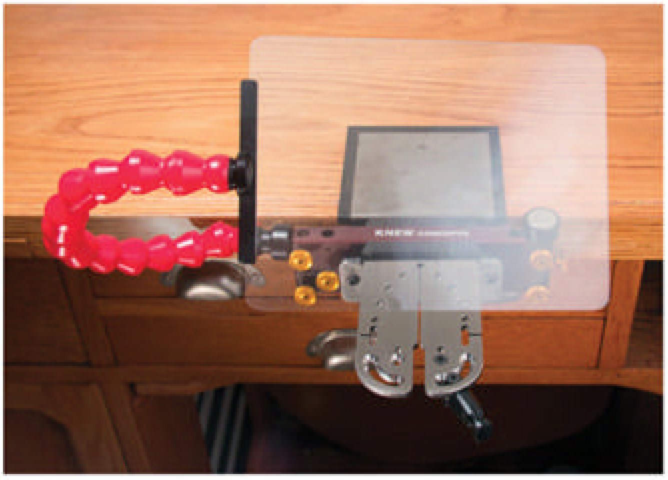
82 main street scottsville ny 14546

**Shields Up!**

Introducing our new Bench Dovetail Accessory Plate and Flex-Mount Face Shield.

Mount a face shield—or other new accessories on any standard bench dovetail mounted tool.

**No More Old Faceful!**



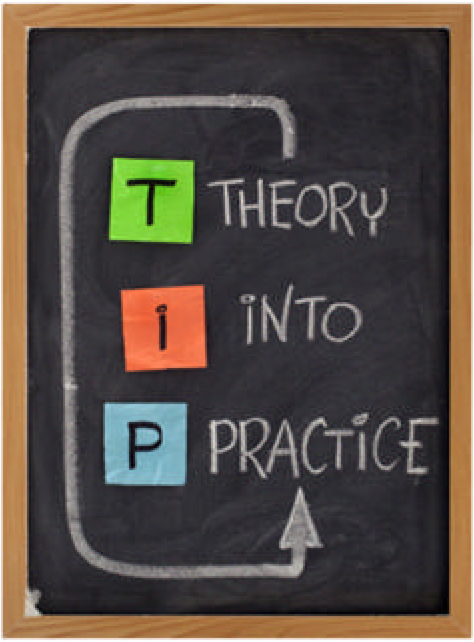
KNEW CONCEPTS

***WWW.KNEWCONCEPTS.COM***

*Made in Santa Cruz, CA*

# Post-show Strategies

**by Marlene Richey**



Now you've done a show or two — maybe they were highly successful. If so, congratulations! Or, maybe they were less so. If so, chalk it up to a learning experience. Either way, just because the show is over, don't assume that *your* job's done. After the doors close on a show, you can still build on the momentum you created during the show. Once you've packed up your booth, headed home, either had a bit of a cry or indulged in a celebratory dance and taken a well-deserved day off, there are some things you should do to keep the sales coming.

When I was running a design firm, I always kept track of sales that were made after a show closed. I found I would often get good orders from a show that was no longer even on my radar. Once, a woman called after having met me at a show *three years* earlier. She had kept my postcard on her refrigerator all that time with the image of a ring she had been saving up to purchase. I was delighted, and she was as well. The moral of the story: A show is never over when it is over.

Remember that, on average, it takes a buyer seeing your line seven times before they buy. Some will purchase in less time and some will take longer. But if they're interested, they will be back. You just need to keep reminding them you're there and ready to do business.

Here is a list of things you should do to make sure you get the most out of your show experience, your hard work, and the money you spent to participate. These suggestions are important whether it was a wholesale show or a retail show.

## Process your mailing list

I'm sure you were conscientious about collecting names and contact information about potential buyers when you were at the show, right? Now, take that list and enter that information into whatever address book or email program you use. Record which show you met them at so when you do another show in the same vicinity, you can send them an email or postcard to let them know the dates and the venue.

## Say "Thank you"

If you want to be really gracious, send a thank you note to everyone who purchased your jewelry. This also serves as a reminder of how great you are to work with, and that they might also want to get the pendant which goes with the earrings they bought. However, don't make the mistake of using a thank you note as a hard-sell — that's transparent, and makes the gratitude seem insincere. The whole point is to simply say "Thank you."

## Send out press kits

If you had any magazine editors stop by your booth and ask for a press kit — and you didn't have one ready — now is the time to pull a kit together and send it off. A basic press kit should contain your contact information, artist statement, CV, and high-resolution images of some representative pieces. Also, add the new contact to your editorial mailing list.

## Mail your line sheets

Those of you who have a line sheet ready to go, now is the time to send it to stores that didn't buy, but expressed interest in placing an order at some point in the future. If you don't have a line sheet, this is the time to sit down and get one going. (If you don't know what a line sheet is, see "What's a Line Sheet?" *opposite page*.) After you've done the initial setup, making changes and additions to your line sheet as you change your jewelry line is simple.

## Apply the Pareto Principle

I know you keep a running tally during a show of what you are selling and your "number," but when you get home, take a look at what sold and what did not. Look at your numbers to see how many ways you can interpret them and the information you can extract from them.

The Pareto Principle (coined by Italian economist Vilfredo Pareto in 1906) goes by various names — Pareto's Principle, Pareto's Law, or the 80/20 rule. Whatever we call it, it states that 80% of the effects come from 20% of the causes. This can be an effective tool to help you make wise business, financial, and design decisions.

According to Pareto, 80% of your sales will come from 20% of your collections; 80% of your business will come from 20% of your customers; 80% of your complaints will come from 20% of your customers; and so on.

Now, look closely at what sold and what

Marlene Richey covered pre-show preparations in the May 2015 issue.

didn't. Which 20% of your pieces made up 80% of your sales? What price point was in the 80% group? What didn't sell well and what sat there without anyone picking it up? Now, figure out how to take advantage of this information. The 80% of sales might be in a particular collection, or perhaps a type of jewelry — say, earrings — with sales coming from across all collections. By taking a close look at what's actually moving, you can be more strategic in creating inventory for your next show.

## Analyze customer feedback

After a show is a good time to reflect on what your customers said they liked or didn't like. What they liked about your booth. What they thought might be improved about a design. You don't have to jump at every suggestion, of course; employ your critical thinking skills to listen to the creative thoughts and insights and exclude the suggestions that were useless.

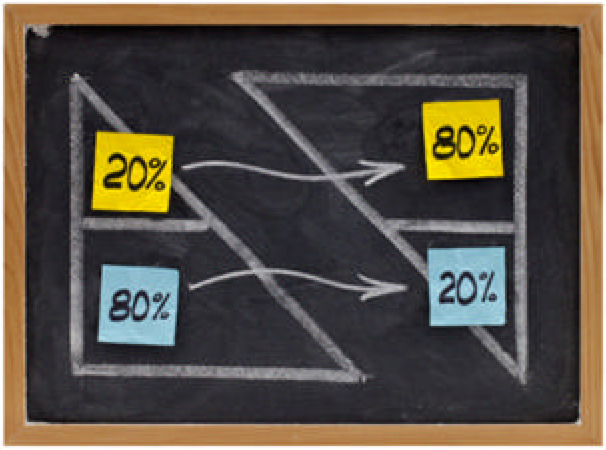
Don't take feedback as criticism; consider it a chance to look at your work from the customer's point of view. You might be pleasantly surprised by their suggestions. Use this information for your next show. If you consistently hear that a pair of earrings is too heavy, then start thinking about how you can make them lighter.

## Critique your booth

What was good about your booth layout, and what would you change? What was too heavy or cumbersome to set up again? What did you like about other designers' booths? What *didn't* you like about other booths you saw? Did you have enough light? Did people seem drawn to your booth or did they just pass you by? What can you change next time to make setup and tear-down more efficient? Did you have an "innie" or "outie" booth, and would you change it? (An "innie" is where attendees can walk into your booth, and an "outie" is one where you have a table or showcase that is along the front and people cannot enter the space behind.)

## Calculate expenses

Figure out exactly how much you spent doing the show and record this information. Be truthful — for example, don't exclude an expense just because you think, in retrospect, you didn't really *need* that snack. You're compiling an accurate picture of what it took to do the show.



©istock.com/marekuliasz

## Was it worth it?

Finally, take a good hard look at the numbers. Once you account for your expenses, how much did you make? Even if you didn't rake in the cash, do you feel the show has potential? Was it hitting your target customer? Be honest. Often we decide to do a show again because we have a gut feeling that we will do better the second time around. We will be more organized, have a better selection of jewelry, and be more professional. Also take into account special circumstances. When I recently attended a retail craft show, a rare, late-season snowstorm definitely (and disastrously) affected the number of attendees. But all in all, exhibitors felt it was worth being there and knew that even if their numbers were down this year, there was a good chance it would be bright and sunny the next year.

Now, put your show file — the one that contains all of your comprehensive post-show notes — with the other files you have created. At some point (maybe when it's time to make a decision about applying for next year's show), go back and revisit it. Take a few minutes to reflect on what you learned, the other artists you met, and the wonderfully creative work you got to experience. This in itself can make a show worthwhile.

## what's a line sheet?

If you're new to the wholesale-show game, this term might be unfamiliar to you. To put it simply, a line sheet is your catalog, which makes it easy for buyers to order from you. "Catalog" might sound fancy, but it can be as simple as a printed spreadsheet. Here are a few things that you should be sure to include on your line sheet:

**Your information:** So easy to overlook, but such a roadblock when it's missing! Your logo, your name, your contact information, and your website should all be prominently placed and easy to find.

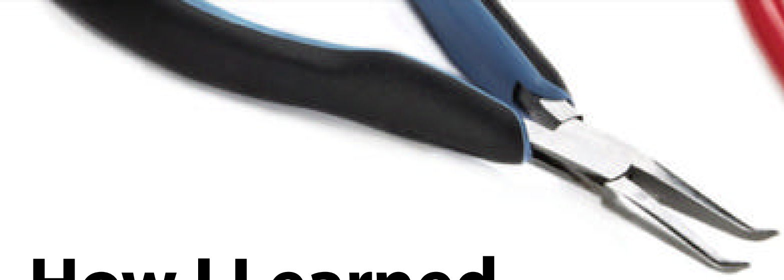
**Images:** Include a photo or sketch of each piece of jewelry in your line. These are not glamour shots, but purely informative — they need to be consistent in style and show the whole piece clearly.

**Details of the piece:** List the name, item number, and any variations possible (different stone substitutions, for example) for each piece.

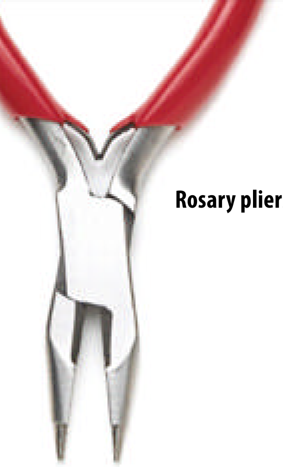
**Pricing:** Include the wholesale price and the recommended retail price.

**Terms:** Do you have a minimum-order requirement? What kind of payment do you accept? What's your return policy? Get all this information out in the open.

*In more than 30 years in the jewelry business, Marlene Richey has run a wholesale business and a retail gallery. She can be reached by email at marlenerichey@gmail.com.*



Box-joint bent chainnose pliers



Rosary pliers

# Pliers; or, How I Learned Not to Pinch My Finger

**by Christopher C. Darway**

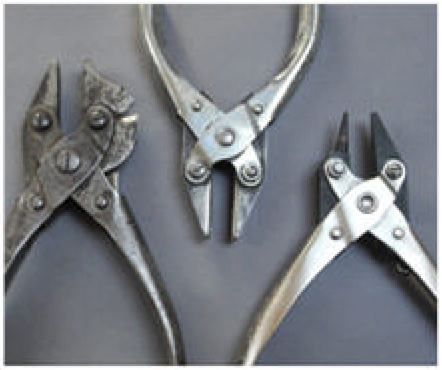
Pliers (and their cousins, wire cutters) are relatively new, as far as tools go, coming into use about 3,000 years after the first percussive tools (hammers). In art from that time, the Greek god Hephaestus (that's Vulcan for you Roman mythology fans) can be seen working metal at his forge with a pair of tongs. Pliers are one of the six (some claim two*) simple machines; they fall within the same family as the lever and fulcrum. Archimedes of Syracuse did not invent the lever and fulcrum, but he was the first to explain the principle. Depending on the placement of the fulcrum and the length of the lever, you can increase the output of energy. Picture a big kid on the short end of a seesaw and a small kid on the long end; they balance each other out. The short end is the forming end of the pliers, and the long end is the handle. Now, go to Wikipedia to see what a seesaw looked like before lawyers discovered playground equipment.

It's easy to be overwhelmed by the many types of pliers available to the jewelry maker. There are prong-opening pliers, prong-closing pliers, forming pliers, hole-punching pliers, bow-opening pliers, crimping, chainnose, roundnose, flatnose, etc. And then there are the cutters: flush cutters, end cutters, side cutters, super-flush cutters, etc. I recently checked the Rio Grande catalog and counted over 25 pages of pliers and cutters.

There are several factors to consider when determining which type of pliers or cutters you want to acquire: construction, quality, end use, ergonomics, and price.

## Construction

There are two main joint constructions that most pliers or cutters use: lap joint (*opposite page, top*) and box joint (*above*). A lap joint is the type found on scissors. In a box-joint design, one of the two levers passes through the other, and the pivot point (or fulcrum) is hidden. The idea is that the box joint is less prone to go out of alignment when twisted back and forth. When I was a student, it was drilled into my head that only box-joint pliers were true jeweler's tools. Do you need to buy *only* box-joint pliers? No. There are many manufacturers who design higher-end, good-quality lap-joint pliers. These tools start with high-grade steel, which is drop-forged and heat treated. And, the area of the lap joint is usually thick, with a screw fastener, which is also heavy duty. With all types of joints, quality comes into play. I have broken inexpensive (cheap) box-joint pliers.



**Parallel-jaw pliers (from left to right): Bernard combination pliers (serrated) and wire cutters, U.S. patent 1890 (mine was made as early as 1913), by W. Schollhorn Co., New Haven, CT; Maun parallel-jaw pliers, England, modified jaws; Parallel-jaw pliers of unknown origin and dubious quality, but they work!**

There is also a third type of construction, and that is parallel jaw (*below left*). It has two pivot points (compound leverage) which lets the jaws remain parallel to each other as they open and close, much like the jaws of a vise.

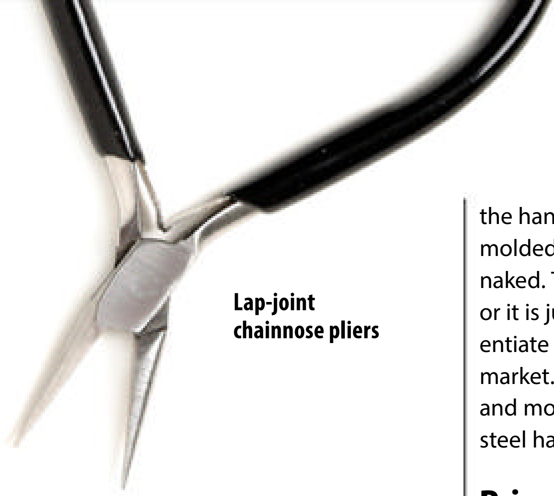
## Quality

Quality is determined by the raw materials used and the craftsmanship of the finished product. I tend to avoid tools sourced from developing nations. We've all read stories of poor working conditions in factories producing high-tech personal electronic devices. Well, picture what a low-tech foundry, forge, and grinding shop making pliers must look like. There are many tool companies who have overseas suppliers, and I know that they regularly put pressure on these suppliers to comply with certain standards. There should be concerns with workplace conditions where these products are manufactured.

Another thing I stay away from are pliers that have been plated with chrome or nickel. I have some old dental pliers that are chrome plated to prevent rust and for cosmetic reasons. These medical tools would not have seen long use.

## End use

If you are serious about your craft — and your craft is metal or wire — spend the money for higher-quality pliers. Why? Inexpensive, light-duty pliers will be fine if you are wire wrapping or doing beadwork, but will be damaged if used for heavier-duty work. High-quality pliers can do both light- or heavy-duty service, and can handle a wider range of tasks, so why buy two sets of tools? All tools can be abused though, so use common sense.



**Lap-joint chainnose pliers**

One of the first mass-produced (pun intended) specialized pliers were rosary pliers (*opposite page, above right*). Rather than cut wire with a side cutter and then switch to roundnose pliers to coil the wire, you could use rosary pliers: a combination roundnose pliers and side cutter in one. And they're still manufactured.

## Ergonomics

*Ergos* comes from the Greek word for work, and *Nomos* means law. Most tools have evolved over centuries of use and seem like they were always right in feel and use. That is not entirely true. There are examples of conscious tool-design decisions as far back as early Greece.

The first use of the word "ergonomics" appeared in a series of articles written by Prof. Wojciech Jastrzębowski in Poland in 1857. (I can't wait to get my hands on that stem-winder of a read!) Great advances in ergonomics came around the time of World War II. Henry Dreyfuss, an industrial designer, published a design book called *The Measure of Man*, first published in 1960, which dealt with the issue of ergonomics.

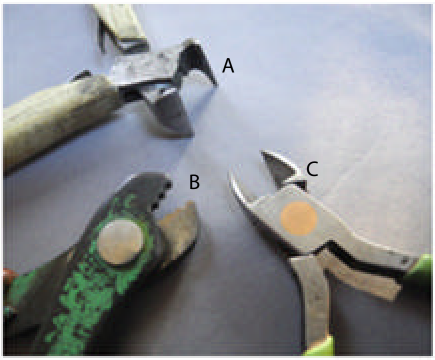
Most, if not all, pliers are made from some alloy of iron. At some point in time, handles began to be covered, probably first with tape. Electrician's pliers would have plastic handles primarily as insulation against electrocution. In jewelry circles, there are two schools of thought on handle design with regard to coverings. One group thinks any covering/coating interferes with the sense of touch between the hand and the object being worked. I see their point. The other group likes pliers with a soft handle to relieve strain, especially when doing repetitive actions. I see *their* point. Surgeons operate while wearing rubber gloves and don't seem to have a "feel" problem. Just making a point. The majority of pliers manufacturers cover the handles of their pliers with foam, molded plastic, or vinyl dip. Very few are naked. They must either know something, or it is just a marketing strategy to differentiate their product from others on the market. Does adding a coating save time and money by not having to finish the steel handles? What do you think?

## Price

Put the word "jeweler's" in front of anything and it will cost more. The highest-priced pliers have origins in Switzerland, Sweden, or Germany. Why? A high standard of living and long tradition of making fine tools. In my collection of pliers you'll find a few Italian, of moderate cost; British, same price tag; Pakistani, low to moderate cost; Swedish, German, and American, moderate to high cost.

The words "economy," "student grade," and "hobby" used to describe pliers mean low cost and usually lesser quality. This fact does not render the pliers useless, but they will not make it to the reading of your will.

Sometimes, however, price doesn't directly relate to quality. Here's an example.



Photos by Christopher C. Darway.

I have three pairs of wire cutters (*above*): a Swedish Lindstrom #7291 ($89.00) **[A]**; U.S. Clauss (made by Xuron) Snapper wire cutter ($13.95) **[B]**; and a U.S. Xcelite diagonal cutter, 4 in. (10.2 cm), semi-flush ($20.00) **[C]**. The Snapper will cut 1⁄16-in. (1.5 mm) piano wire without complaint. The Lindstrom has a wire limit of 0.014–0.049 in. (0.35–1.25 mm) copper wire — no steel. The Xcelite will cut 14-gauge (1.6 mm) copper, silver, or steel to 0.018 in. (about 1⁄64 in./0.5 mm). While the Lindstrom is a box-joint design, both American cutters have lap joints. Notice the size of the pins in the hinges, however. They are large, to keep the jaws aligned. The Xcelite has an oversized bronze pin. Over the years, I have peened the pin on the Snapper cutter to tighten the joint (rest it on an anvil and lightly tap the pin with a hammer). All of these tools are used in the electronics industry. Of the three, only the Snapper tool leaves a flush cut on both ends of the wire. All three are excellent in design and quality, they just serve different purposes.

See our September 2014 issue to see illustrations and definitions of the "6 Simple Machines." Get the issue at **www.artjewelrymag.com/store**.

But when it comes to pliers, the name (and the price) isn't the only difference. There are some pliers from other professions that can be used for jewelry work, but often, the problem with them is almost instantaneously apparent. Most pliers used by electricians, mechanics, and even woodworkers have serrations on the inside of the jaws. These serrations improve the grip of the pliers, but will severely mar the surface of metal. Don't even think of grinding off the teeth. If the pliers are halfway decent, the teeth will have been heat hardened during manufacture. What about covering the jaws with tape? Don't go there. If tape is a good idea for pliers' jaws, then why don't manufacturers sell pliers with tape? Serrations are there for a reason. Plus, I hate to have to remove tape from pliers. I'd rather have dedicated pliers with brass, wood, rubber, or nylon jaws. Just one old codger's opinion. ■

*Six simple machines are the lever, wheel and axle, pulley, inclined plane, wedge, and screw. Some folks argue there are actually only two simple machines: a lever and inclined plane. A wheel and axle is really a lever and fulcrum. A pulley has wheels. The wedge and screw are both inclined planes.

*Christopher C. Darway can be reached via email at cdarway@outlook.com.*

**Billanti® Casting Co., Inc.**

For 60 years
Billanti Casting Co. Inc. has been a leader in Casting Services.

We know your casting projects are important to you, so we specialize in offering the best customer service with focused individualized attention.

**METALS WE CAST IN:**
- Gold
- Silver
- Billanti Brass®
- Bronze
- White Bronze

ALL MOLD MAKING SERVICES AVAILABLE

**OUR ONLY LOCATION:**
299 South 11th Street • PO Box 1117
New Hyde Park, NY 11040
**516.775.4800**

www.billanticasting.com

**Ideal Bench-top Kiln for Studios!**

Celie Fago,
"The UltraLite Kiln has proven to be the best heat source for Keum-Boo"

**ultralitekiln.com**

**Like us on Facebook!**

Go to www.Facebook.com/ArtJewelryMagazine

**THUMLER'S TUMBLER ULTRA VIBE**

**Order Toll Free: 1(800) 225-1017**
**http://www.thumlerstumbler.com**

- 30 models & kits
- 1 qt - 4¾ gal.
- Thermally Protected
- Durable & Safe
- All Steel Construction

*Building Tumblers for Hobby & Industry Since 1959*

Write for Catalog
Tru-Square Metal Products • P.O. Box 585 • Auburn, WA 98071

**A Paragon digital kiln that fuses glass, anneals beads, and fires silver clay**

Paragon's affordable SC-2 jewelry kiln also fires enameling and decals. Shown is the optional bead door and glass viewing window. Fires rapidly up to 2000°F on 120 volts. 8" wide, 7 ¾" deep, 5 ¾" high interior. Precision 8-segment electronic controller stores 4 programs. Ships by UPS. Certified by TUV to CSA and UL standards. Free color catalog.

Paragon Industries, L.P.
2011 South Town East Blvd.
Mesquite, Texas 75149
800-876-4328 / Fax 972-222-0646
info@paragonweb.com
www.paragonweb.com

**SLUMP, MOLD, FORGE**

GO WILD WITH **WILDWOOD** DESIGN!

~CUSTOM MACHINED PRODUCTS FOR THE ASPIRING ARTISAN~

WILDWOOD DESIGN
Your Creativity is Our Inspiration

**JEWELRYCORES.COM**

Introducing: The Revolutionary Hand-Held Wire Jig

All NTaJ! Pegs & Pucks Are Interchangeable Between Systems

Now that's a Pliers!

Now-Thats-a-Jig.com

Distributed by

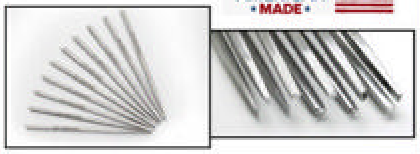
Now that's a Jig!

NEW Small Chasing Tools

For Jewelry Scale/ Detail Chasing

10 Piece Set

Proudly 100% AMERICAN • MADE •



NECHAMKIN CHASING TOOLS™

Available for order through

Nechamkin.com

973-786-0013

JOOLTOOL by Anie

3M ABRASIVES

Finish like a PRO

Polish
Grind
Sand
Lap
Buff
Drill

BEFORE

AFTER

VISIT BOOTH # 416
BEAD & BUTTON SHOW

JOOLTOOL.COM
SALES@JOOLTOOL.COM 1-888-337-1230

Hallmarktags.com

Brand It Yours!

# Stumped! Setting Up a Forming Station

**by Michael David Sturlin**

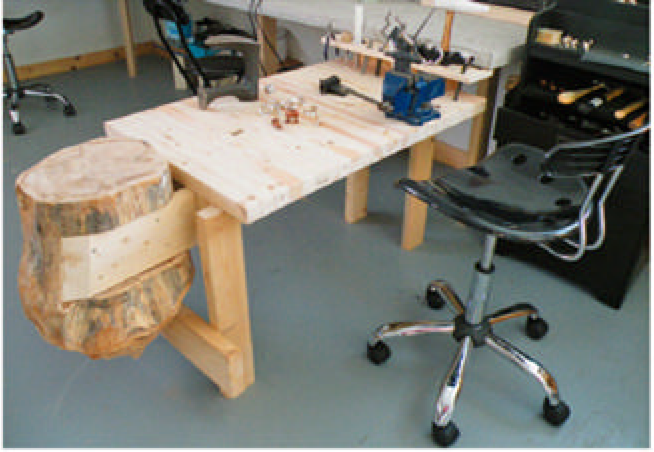


Photo by Tina Lee DeGreef.

**Jewelry maker Tina Lee DeGreef has a reclaimed tree stump bolted to the end of a custom-built work station for forging and forming.**

One of the most common pieces of equipment in a metalsmith's studio is a humble piece of nature — a section of a tree trunk. The stump, or a suitable stand-in, is used for a wide variety of metalsmithing applications and is itself an essential tool for much of our work. The ubiquitous stump is typically adjacent to the workbench — it's a personalized studio centerpiece configured to suit the particular needs, tasks, and work habits of the individual practitioner.

## A pounding place

A central, multi-purpose forming station is a mainstay for most metal workers. Having an area devoted to specific tasks that aren't suited to the top of the bench is practical. Activities like hammering, forming, and shaping with sandbags, blocks, dapping tools, and mandrels often require more space and a different elevation than the top of a standard jeweler's bench.

Regardless of the scale of the work being done, in most metalsmiths' studios there is also the need to secure several pieces of larger equipment: anvil, vise, and stake holders, to name a few.

The classic tree stump provides several natural benefits for forming:

- It is heavy, solid, stationary, and stable.
- It won't tip over or bounce under forceful hammer blows.
- It helps reduce noise.

Alas, not everyone has access to a tree stump! No worry: Being the frugal, ever-resourceful personalities that jewelry makers are, there are plenty of alternatives.

## DIY stand-in

If there's a felled tree conveniently close to your studio, you can saw off a chunk and roll it home. But if there's a lack of downed trees in your neighborhood, there's another option. A visit to the lumber department of a home-improvement center or your local hardware store can provide all the material you need for a workable alternative.

Before you buy an uncut length of wood, check to see if you can scavenge pieces that will work just as well. There's usually a cut-off bin with odds and ends at a markdown near the lumber area.

The best materials to make a solid forming station are 4 x 4-in. (1.2 x 1.2 m) or larger beams, 2-in. (51 mm)-thick boards, or even heavier timbers. If you don't have a suitable saw at home, you can usually have the wood cut to the desired length in the lumber department for a modest fee.

To make a forming station, stand pieces of wood/lumber upright; assemble enough pieces to create the size, shape, and dimension you desire, and then bolt or strap them together. This will make a solid stump substitute. If the arrangement is substantial enough, it can be freestanding, just like a stump; no need to attach it to the floor or a wall. The cut ends (revealing the wood end grain) will provide a good surface for added features, like depressions and grooves.

In keeping with the frugal, waste-not/want-not aesthetic of the goldsmith, many of us use forming stations fashioned from recycled and repurposed materials. I built two stations in my studio using posts, beams, and scrap lumber that I recycled from home-remodeling projects.

One goldsmith colleague used part of a telephone pole cut into three sections at different heights bundled together for a triple station: one for an anvil, another for

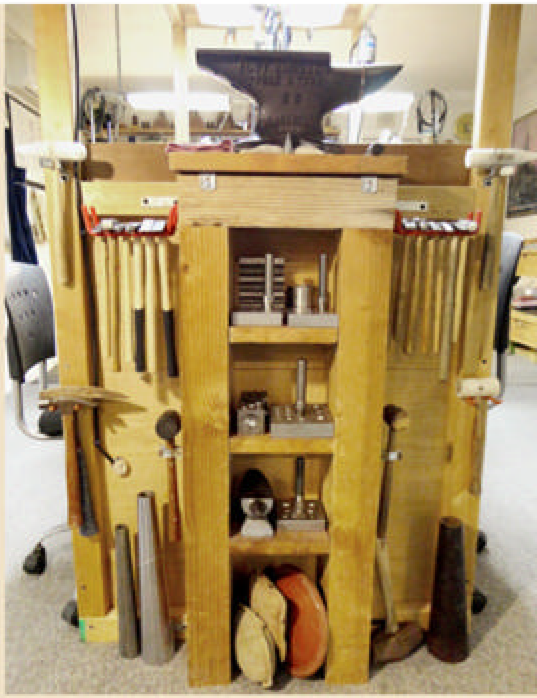
## michael's anvil stand

I want my anvil close to my rolling mill and hot-work area to aid with efficiency when melting, milling, and annealing metal. I also use it for demos, so it must be visible from the student benches.

I made my anvil stand from part of a 4 x 6-in. (1.2 x 1.8 m) beam salvaged from a garden project. The height of the anvil is suited to jewelry-scale forging and forming at a standing position.

Shelves below the anvil are for storing swage blocks, bezel blocks, and dapping and forming equipment.

I made hammer-hanging racks from a pair of bicycle hooks, U hooks, and clip holders.



a vise, and the third as a forming platform. Another colleague has a two-tiered forming station she built using old railroad ties she salvaged from a neighbor's landscaping renovation. Another scavenged and refurbished a large wooden spool from his utility company.

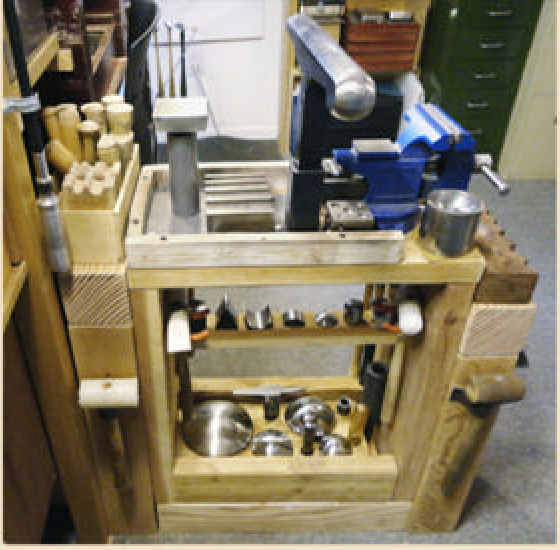
A tiered work station is an advantage if you frequently need to work at different elevations. The top of my forming station is 24 in. (61 cm), putting the top of the vise at 30 in. (76.2 cm), which is just above waist height when I am seated. When I work with a T-stake in the mounted holder, the stake is at 34 in. (86.4 cm). It really helps to have an adjustable height chair as well. If you're working standing up, make sure that your work surface is high enough that you can stand erect, without bending over.

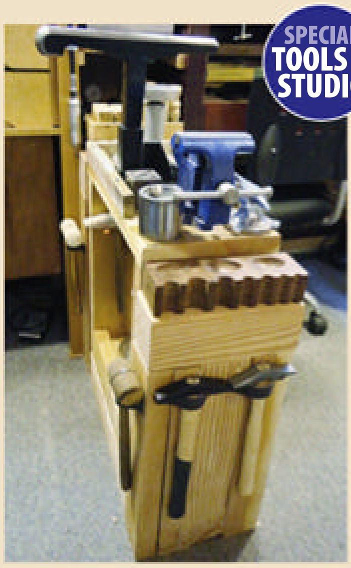
## Mounting and attaching

So you have your station; how do you mount your various attachments? A simple approach for mounting stakes is to drill and chisel vertical openings into the station's surface to hold forming stakes. Another option is to mount a metal stake holder, or horse, to the stump.

Vises and stake holders are usually attached with substantial lag screws or carriage bolts. For best results with screws, pre-drill pilot holes slightly smaller than the diameter of the screw threads. Using hex-head hardware makes it simple to get the screws or bolts tightened securely with an adjustable wrench or socket; this also makes them easy to remove, if needed. Depending upon the size of the mounting holes in the item being secured, you might need to use cut (flat) washers below the screw or bolt heads.

There are a couple of ways to mount a large anvil. Two blocks of wood shaped to fit the sides or ends of the anvil's base, screwed in place, make a foot trough for the anvil to rest in and still be easily moved. Metal plates screwed down over the feet of the anvil make a permanent holder for an immovable attachment.





Photos by Michael David Sturlin.

## michael's forming station

I repurposed odds and ends of scrap lumber to make a dedicated work and storage station for my metalsmithing equipment. The top has a vise and two stake holders to enable me to work with several interchangeable pieces of forming equipment in place at any given time.

This station is positioned between my two primary benches. The fixtures are equally accessible while seated at either bench, allowing two people to work at this compact station at the same time.

I designed my forming unit with a shelf underneath, to store a set of small stake attachments, and an open base inside for larger stakes. There are four U hooks for storing hammers and mallets inside the frame, and belt loops on the outside for hanging four hammers and two mandrels. This keeps everything conveniently stowed yet readily accessible, without being in the way of either bench or chair.

## Tool straps

Hanging hammers and mallets around the perimeter is a typical addition to a forming station. An old leather belt or a plumber's strap attached with nails or screws provides loops for an array of pounding tools. The loops need to be large enough to holster the handle without allowing the head to slide through. Loops also need to be far enough apart so the hammer faces won't bang together. (See, "Tactics for Tool Storage: Hammers," *page 38*, for instructions for making this kind of arrangement.)

## Other features

Many of the added features of a stump are for holding tools and stabilizing work. Here are some common additions:

- **Carved depressions** in the top of the stump are common — typical configurations are round and oval depressions used for shallow forming, sinking, and dapping.
- **Straight and tapered grooves** carved into the stump top are used for curving and bending sheet metal to form tubing and spiculum.
- **Horizontal holes** drilled into the sides of the stump are useful for securing ring mandrels.

⚠ **SAFETY NOTE:** Don't walk away and leave a mandrel protruding from a holder. At the very least, drape a red bench rag over the mandrel as a cautionary flag! Better yet, just take it out before you walk away.

Working at a properly designed work area that is solid, stable, the correct height, and well-suited to the tasks at hand makes the experience of practicing your craft purposeful, controllable, efficient, productive, and ever more enjoyable!

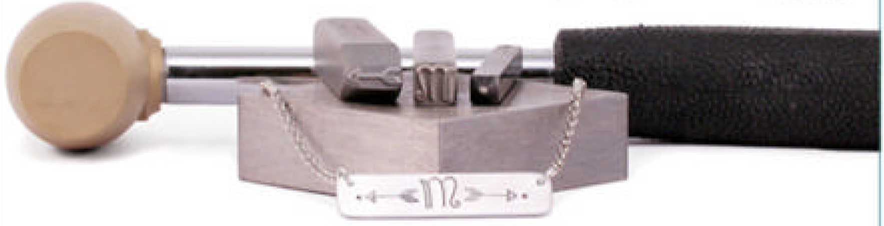
Check out some of Michael's own ingenious storage solutions in "Tactics for Tool Storage: Hammers," *page 38.*

*Michael David Sturlin is an award-winning goldsmith, jewelry artist, and educator. You can reach him via email at michaelsturlinstudio@cox.net.*

MLS®
Minnesota Lapidary Supply
Some of the Equipment and Supplies we stock:

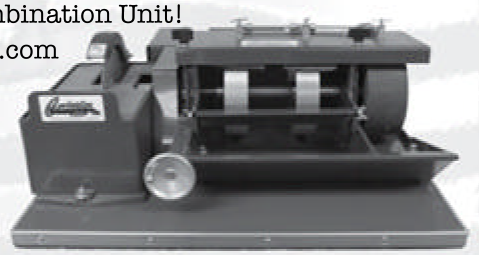
- Tumblers
- Abrasives
- Polishes
- Saws
- Blades
- Arbors
- Wheels
- Discs
- Belts
- Burs
- Drills
- Laps
- Books
- Cutting Oils
- Tools

Call and request our FREE Catalog:
Minnesota Lapidary Supply
201 N. Rum River Drive
Princeton, MN 55371
Ph/Fax: (763)-631-0405

♡ METAL STAMPING IS EASY & FUN! ♡
we'll teach you for free
CLICK. play. LEARN.

beaducation.com/stamping

Lillypilly Designs

www.lillypillydesigns.com

Covington's
MAKE COVINGTON'S COMBO
YOUR NEXT PURCHASE!
Grind, Shape, and Polish Jewelry Pieces on a Covington Combination Unit!
www.covington-engineering.com
877-793-6636
ORDER TODAY!


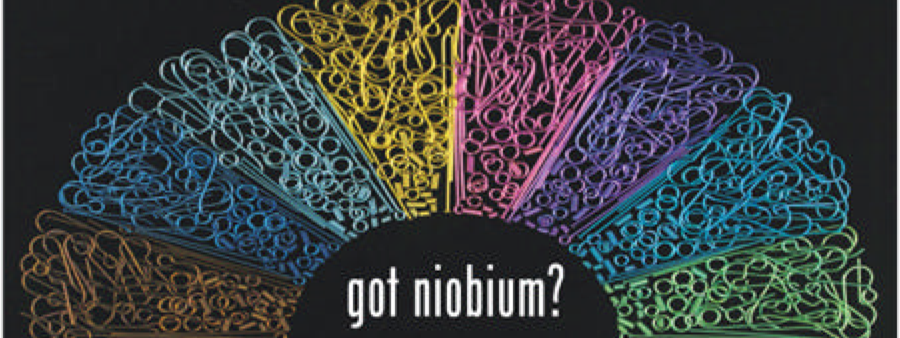
BOOK Binding
eyelets
VA volcano arts
METALSMITHING
COPPER MESH
We have the tools and supplies you need for your projects and classes
www.volcanoarts.com
New bookbinding and metalsmithing classes with Christine Cox.
Check out our website for lots of how-tos!
STAINED GLASS
MICA
retail only - catalog online

Support your local bead shop.
Made in the USA
XURON for Jewelers

Xuron® Precision Pliers
Wirework just got easier...
/XuronCorp /Xuron /XuronCorp XURON.com

Ionic Cleaner
Model: 309 Sb
Made in the USA

SPEEDBRITE INC.
www.speedbrite.com
800-438-2310

beautiful hypoallergenic findings in a rainbow of colors

got niobium?
REACTIVE METALS STUDIO INC, WWW.REACTIVEMETALS.COM, 800-876-3434, 928-634-3434

Here be(ad) Dragons ...

Free Shipping USA & Canada
USPS Shipping to the USA, US $ Pricing
see website for details

BeadFX
2012
www.beadfx.com

check out our "Shaped Bead Buffet"

Bezel Mandrels

BEZEL FORM™
434-941-6275
www.wirewrapmandrels.com

Bejeweled™
SOFTWARE COMPANY

858.367.8236
bejeweledsoftware.com

jewelry designer MANAGER™
Pricing Jewelry Made Easy!

NEW PREMIER EDITION!

Inventory & Pricing Software for Jewelry Designers, Artists & Crafters

Mac & PC compatible

TRONEX®
CUTTERS & PLIERS

model # 511
model # 5223

PRECISION CUTTERS & PLIERS FOR WIRE WORK, CHAIN MAILLE AND BEADING.

e-mail: sales@tronextools.com
for a copy of our NEW jewelry catalog

quality • comfort • precision • performance

www.tronextools.com

Available at jewelry suppliers worldwide

Discover Your Next Pattern
Texture Tiles, Over 400 Designs

Explore our extensive selection of flexible, washable and versatile **Texture Tiles** at Cool Tools.

Our beautiful collection of embossed and fine line designs are inspired by romance, nature, modern art and more. Check out our unique designs to inspire and create.

cooltools.us
888.478.5060
COOL TOOLS

■ TECHNIQUE
**INTERMEDIATE | METAL/METAL CLAY**

# Metal Clay & Wire Fusion

*Paint metal clay paste onto a wire framework to create a lace-like effect.*

**by Valerie Preston**

Fall is my favorite season. I adore the earthy smells and vibrant colors, but mostly I'm intrigued by the lacework patterns found throughout the autumn foliage. Wanting to capture those rich, organic textures, I developed a process of fusing metal clay paste onto woven fine-silver wire. Although I use PMC3, cast sterling silver, and fine-silver wire, you could tweak this process to work with other metal-clay slips and metals.

## BASICS & VIDEOS

| **Learn fundamental techniques in these bonus tutorials:** | B | 🎥 |
|---|---|---|
| Making lavender-oil paste for metal clay | | ● |
| Program a digital kiln | | ● |
| Liver of sulfur patina | ● | ● |
| Measuring, mixing, and coloring resin | | ● |
| Setting a cabochon part 2: Using a bezel pusher | | ● |
| Setting a cabochon part 3: Using a burnisher | | ● |

**B Basics,** ***page 73***
**🎥 Videos, www.artjewelrymag.com/videos**

## materials

- Fine-silver metal clay, 25g
- Pure essential lavender oil
- Sterling silver form, 18-gauge (1.0 mm) or thicker
- Fine-silver wire, 26-gauge (0.4 mm) (or smaller), round
- Faceted stone and fine-silver bezel cup, of matching sizes (optional)

### toolboxes, page 75

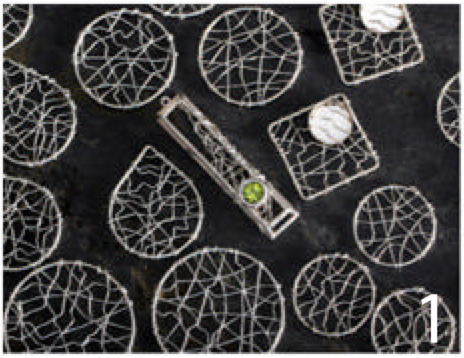
- Metal clay
- Resin (optional)
- Stone setting (optional)

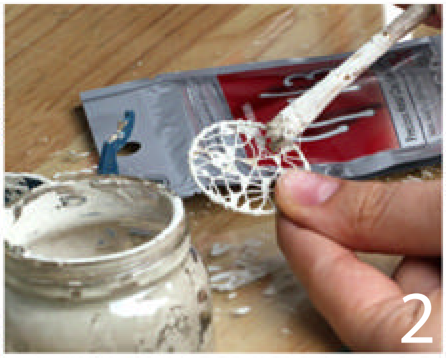
## additional tools & supplies

- Eyedropper
- Drill bit(s) (optional)
- Enameling trivet (optional)
- Patina (optional)
- Acetone (optional)
- Razor blade (optional)
- Sealant (microcrystalline wax, or clear acrylic spray sealant)

Find out where to buy supplies, *page 79*
See Safety Basics, *page 75*

To determine which type of sealant to use, read "Sealants: How and When to Use Them" at **www.artjewelrymag.com/reference**.

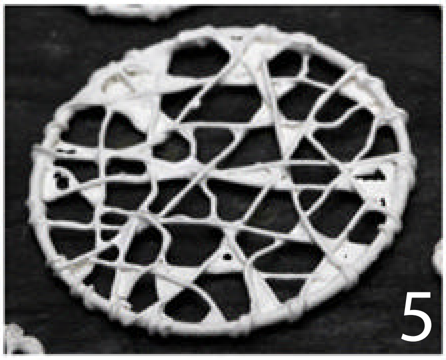

1


2

3

Process photos by Keith Preston.

4


5

6

**Make the paste.** Place a 25g lump of fine-silver metal clay into a small airtight container. Add about 1 tsp. (4.93 mL) of distilled water and use an eyedropper to add about 15 drops of pure essential lavender oil to the container.

**NOTE:** The smell of the lavender oil is strong in its concentrated form. Work in a well-ventilated area.

Use a wooden craft stick to mix and add oil (up to 30 drops) to reach a smooth paste consistency. If you have less or more clay, adjust the amount of lavender oil and water accordingly. Cover the container, and allow the mixture to sit overnight.

By morning, the consistency should be nice and creamy (aim for the consistency of an oily, warmed, natural peanut butter). If necessary, add more oil or water to achieve a thick, spreadable paste.

**Prepare and add wire to the form.** Prepare your sterling silver form for weaving. I do not recommend using forms that are less than 18-gauge (1.0 mm) thick; you need the extra thickness to hold up to the weaving and firing process without distorting the piece.

**NOTE:** Use cast, cold-connected, fused, or laser-welded forms for this technique. Do not use soldered forms. The firing process can weaken the joins, and the piece may fall apart.

Use 26-gauge (0.4 mm) fine-silver wire to weave a design onto and around your form. Secure the wire by wrapping the wire end around the frame two or three times before continuing to wrap the form. Use chainnose pliers to add angles and bends to the wire **[1]**. This not only creates visual interest, but adds more surface area for the next step.

**NOTE:** If you are using faceted stones in your design, add bezel cups to your form at this point. (This technique will not work well for cabochons that require a flat base.) Use a #78 (1/64-in./0.41 mm) drill bit in a rotary tool to drill an even number of holes in the bezel wall near the base of the cup. Run wires through the holes, keeping them as close to the base of the cup as possible, and secure the cup in place. If the wires are too high, you won't be able to properly set the stone. I have used fire-safe stones in the past, but I prefer to use natural stones and set them after firing.

Weave the wire in and out of the frame and the growing wire pattern. The more complex the weaving is, the stronger the piece will be. When you are satisfied with the pattern, use flush cutters to trim the wire and use flatnose pliers to tuck the end against the frame. Run your fingers gently over the piece to check for sharp ends. If you find any, trim and tuck them again.

**NOTE:** Before applying paste, make sure your wires are tight. If the wires are slack, the metal clay will crack and flake off. You don't need to re-wrap your piece; just use

Check out "Guidelines for Firing Gemstones in Metal-clay Jewelry" at **www.artjewelrymag.com/charts**.

chainnose pliers to add more angles and bends to the pattern. This automatically tightens the wires.

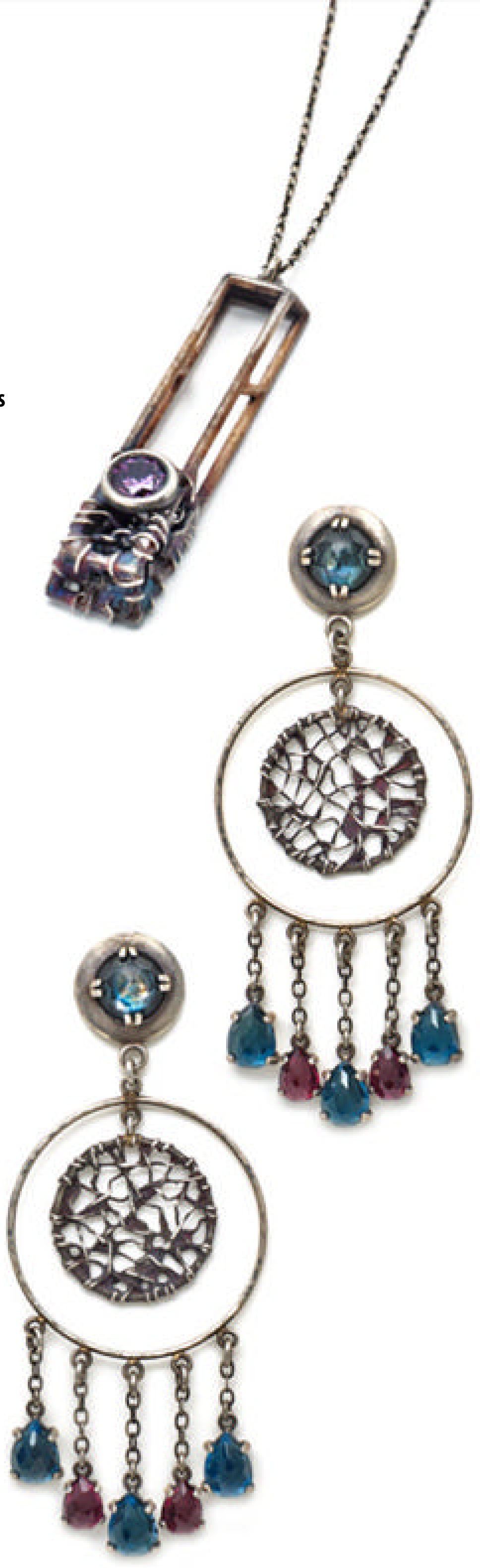
**Add the metal clay paste.** If your container of paste is big enough (and you don't mind being messy), you can dip the entire piece into the lavender-oil paste. I use a small paintbrush to apply paste to the wire to keep the coverage sparse, and so that my pieces more closely resemble skeletal autumn leaves **[2]**.

Place the coated form under a heat lamp or on a hotplate until the paste is completely dry. (See the "Metal Clay Dryness" chart, *below*.) Once it is dry, carefully pick up the heated piece with tweezers. Continue layering and drying the paste until you have the desired coverage. Dry the piece completely before firing **[3]**.

**Fire your piece.** Place your piece in the kiln and set the kiln to a slow ramp to 1110°F (599°C) and hold it at that temperature for 2 hours. After firing, let your pieces cool. Depending on how much of a hurry I'm in, I will either prop open the kiln door, or move the pieces to a tile so they cool more quickly.

**NOTE:** If you are testing firing temperatures of different brands of metal clay, keep in mind that sterling silver's melting point is 1640°F (893° C).

Be aware that any exposed sterling silver will have oxidized in the kiln and will be dark **[4]**. Check your pieces carefully. If you feel the piece needs more metal-clay coverage, paint on more paste. Dry and refire the piece using the same firing schedule as before. (I typically apply at least two coats to each piece.)



**Use this technique to stylize an entire piece, like the cuff, *opposite page, below,* or use it to add an accent like in this pendant and earrings.**

**Finish the piece.** After firing, you can leave your wires matte white **[5]**, burnish them with a brass brush or steel burnisher for a little contrast, or add a patina.

**NOTE:** Depending on how delicate your piece is, it may not be sturdy enough to be finished in a tumbler.

Set any stones and polish your piece as desired. (I keep my polishing minimal at this point, and typically only go over my pieces with a steel burnisher.)

**Add resin.** To add a splash of color or to secure any wires that may have come loose, add a small amount of colored resin to select areas **[6]**. Place the piece on an enameling trivet to prevent it from sticking to your work surface. Mix the resin and allow it to sit and thicken (the time needed will vary by brands). Use a toothpick to apply resin to select areas of the form. The thickened resin will stay suspended between the wires. If it runs, or you don't like the look, clean off the wet resin with acetone, or wait until it cures and scrape it off with a razor blade.

Once you have achieved the desired finish, seal the piece with microcrystalline wax or a clear acrylic spray sealant.

## Metal Clay Dryness

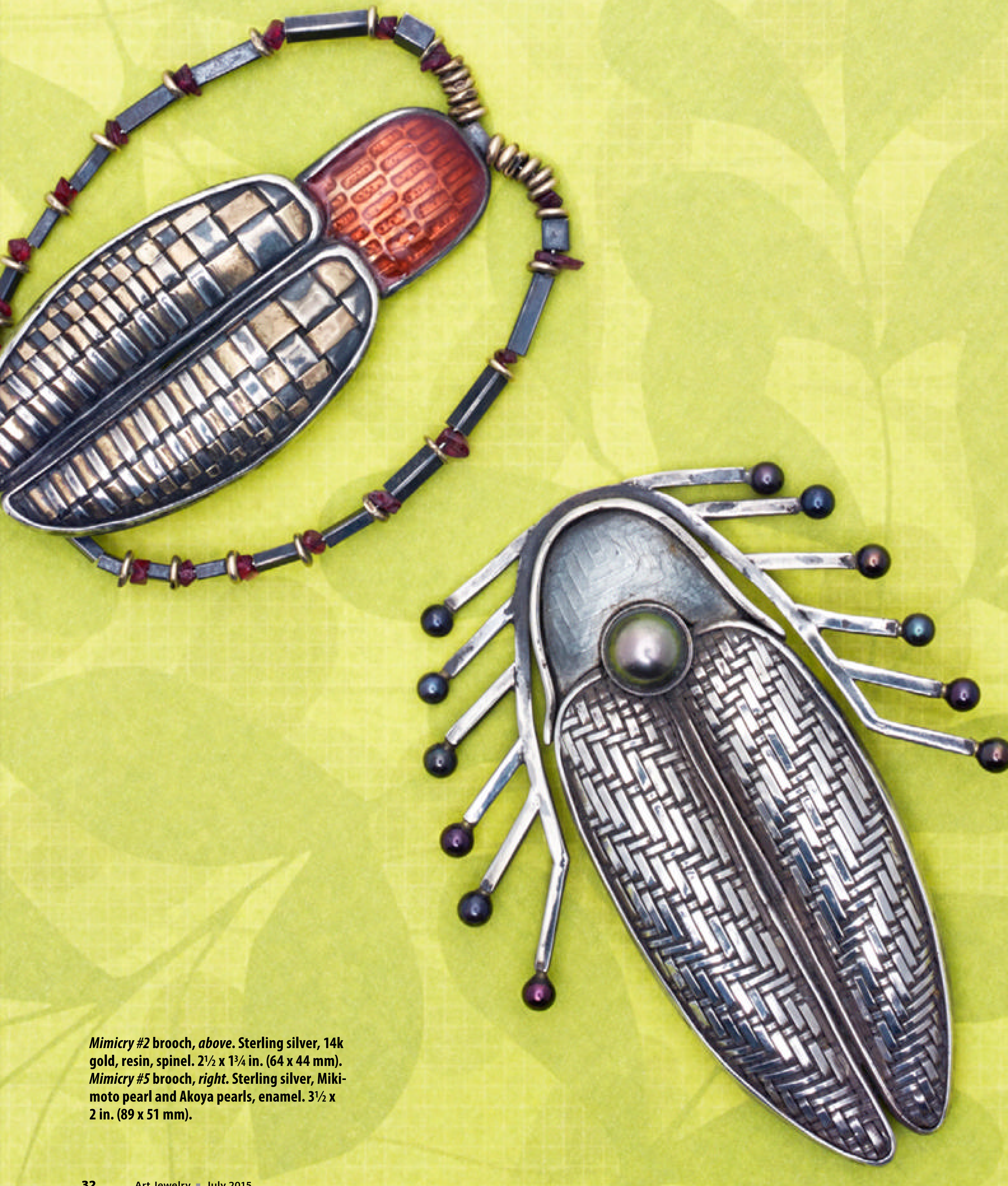
| | |
|---|---|
| **Wet** | A lot of moisture; very pliable |
| **Semi-dry** | Some moisture; firm, holds its shape |
| **Mostly dry** | Nearly devoid of moisture; rigid |
| **Completely dry** | No moisture; can be fired |

### ASK THE ARTIST: VALERIE PRESTON

**What is your favorite unexpectedly useful tool?**

"A teeny tiny 1.8 mm flat-head screwdriver. I use it as a bezel pusher when I want a rougher texture. I have also cut off the tip of several, reshaped the ends to an offset "point" and used them in my flex shaft to create different swirl texture tools."

Contact: www.prestonjewelry.com



***Mimicry #2*** **brooch, *above*. Sterling silver, 14k gold, resin, spinel. 2½ x 1¾ in. (64 x 44 mm).** ***Mimicry #5*** **brooch, *right*. Sterling silver, Mikimoto pearl and Akoya pearls, enamel. 3½ x 2 in. (89 x 51 mm).**

# ADAPT Textile-weaving Techniques TO METAL

*Set a warp and weft with flattened wire, and weave your own silver "fabric."*

**by Jeanie Pratt**

My career as a fiber artist stretches back to the early '70s. I originally learned to weave metal in a workshop I took from Susan Elizabeth Wood in 1998, and after that workshop I traded in my yarn and adopted wire as my "fiber" of choice. Flattened wire is a wonderful material with which to weave. It has smooth edges, and it's simple to make a variety of widths by using a range of wire gauges. It's easy to dress up a simple weave by incorporating more than one width of wire, or adding different types of metal wire. Small sheets of metal can be created from woven wire to incorporate into your jewelry.

## materials

- Sterling silver wire, various gauges (10–24/2.6–0.5 mm), dead soft, amounts determined by design

### toolboxes, page 75

- Soldering/Annealing
- Wirework

### additional tools & supplies

- Vise
- Draw tongs
- Rolling mill
- Jig for rolling mill
- Leather gloves
- Digital calipers or sheet-and-wire gauge
- Copper coupling ¾-in (19 mm)
- Dapping punch 1-in. (25.5 mm)
- Small cutting mat
- Brass strip, ¼ x 0.032 x 3 in. (6.5 x 0.8 x 76 mm)
- Tin snips
- Tape: ½ in. (13 mm) permanent double-sided tape; ½ in (13 mm) masking or artist tape
- Upholstery needle
- Diamond disk (optional)
- Flex shaft or rotary tool
- Pressing tools, various sizes
- Acetone (optional)
- Wood blocks, 2
- Hammer

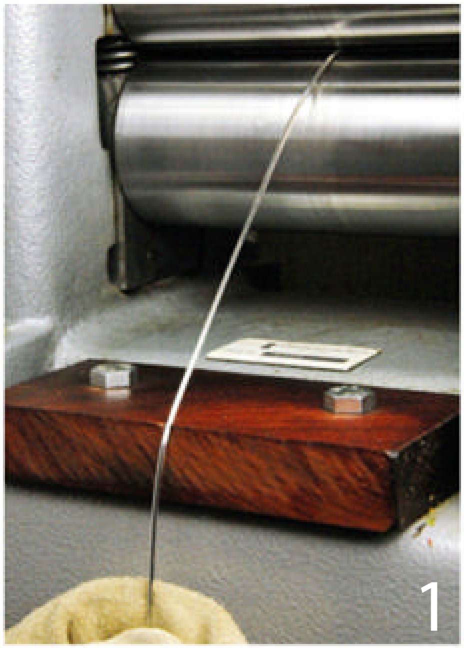
Find out where to buy supplies, *page 79*
See Safety Basics, *page 75*

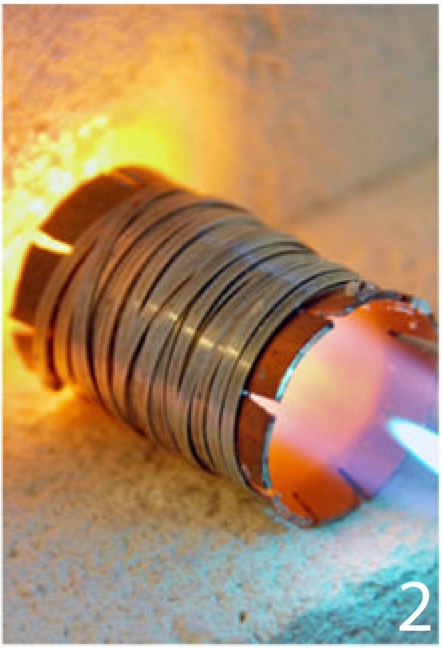
## BASICS & VIDEOS

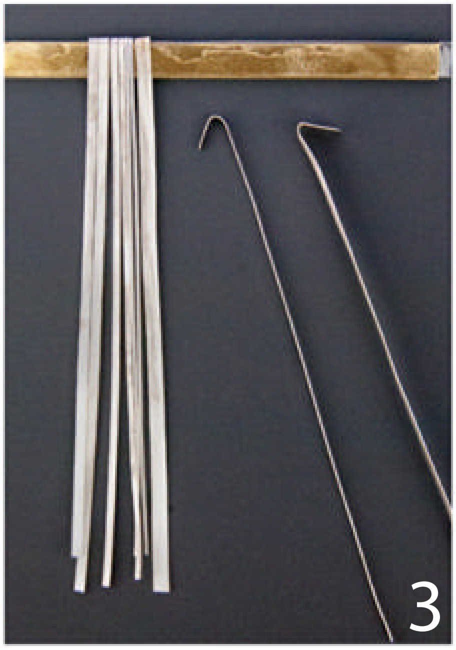
| **Learn fundamental techniques in these bonus tutorials:** | B | 🎥 |
|---|---|---|
| Using a rolling mill | | ● |
| Rolling mill maintenance | | ● |
| Annealing wire | | ● |
| Pickle basics | ● | ● |

**B Basics, *page 73***
**🎥 Videos, www.artjewelrymag.com/videos**

Download "Jeanie's Genius Tools" for an in-depth look at her custom-made tools — the rolling mill jig, annealing spool, and pressing tools — used for this technique! **www.artjewelrymag.com/reference**


1


2


3

## wire-weaving vocabulary

**WEAVING** Textile craft in which sets of yarn are interlaced to form a fabric
**YARN** Flattened wire will be used as a "specialty yarn" in this technique.
**LOOM** An apparatus for weaving yarn into a textile; in this article, the "loom" consists of flattened wire, a brass strip, masking or artists tape, and cutting mat.
**WARP WIRE** Flattened wire arranged vertically, top to bottom, on the loom
**WEFT WIRE** Flattened wire woven horizontally across the warp wires
**PLAIN WEAVE** Weaving the weft wire repeatedly over one warp wire and under one warp wire
**SHED** The opening formed in the warp to pass the weft wire through
**WEAVING PICK** Pointed rod used to pick up the shed in the warp. For this technique, I use an upholstery needle.
**SELVAGE** Referred to as either "warp selvage" or "weft selvage," and correspond to the edges that run parallel to the warp or weft. Woven with two 18-gauge (1.0 mm) wires, they prevent the weaving from unraveling and help keep the warp and weft perpendicular to each other.

**NOTE:** These may not be the exact terms as applied to traditional fiber-weaving techniques.

**NOTE:** In this article, I've used sterling silver wire in several gauges from 10- to 24-gauge (2.6–0.5 mm), to add interest and varying line weights to my weaving. If this technique is new to you, 18-, 20-, and 22-gauge (1.0, 0.8, and 0.6 mm) are the easiest gauges to use.

**Straighten the wire.** The wire must be straight before you flatten it in a rolling mill. To straighten the wire, secure one end of the wire in a vise, and then use draw tongs to pull on the other end. You will know the wire is straight when you feel it stretch and elongate slightly.

**Flatten the wire.** Use the rolling mill to flatten the wire to a 30-gauge (0.26 mm) thickness. To find the setting for 30-gauge on your rolling mill, feed a bit of scrap wire into the rolling mill and roll it back out again. Measure the thickness of the wire with digital calipers or a sheet-and-wire gauge. Adjust the rolling mill and repeat until the wire measures 30-gauge (0.26 mm).

**TIP:** To flatten wire thicker than 16-gauge (1.3 mm) to 30-gauge (0.26 mm), pass it through a rolling mill more than once, making small adjustments until you reach the final thickness. As a rule of thumb, when reducing the thickness of metal in a rolling mill, you should also anneal it after reducing its thickness by 50%. After annealing, be sure to clean and dry the wire before running it through the rolling mill again, or you can damage your rollers.

It is possible to flatten wire by yourself, but it's helpful to have an assistant for this step. Secure a guide jig on the front of the rolling mill. My jig is a simple block of wood with a slot in the center of the front edge. The jig helps me keep the wire straight and perpendicular to the rollers. Run the wire through the jig and pass it through the rollers. Wear a leather glove and hold tension on the wire as you crank the handle **[1]**. At the same time, have your assistant use draw tongs or heavy-duty pliers to grasp the emerging end of flattened wire. He or she should keep light tension on the wire and ensure the wire is pulled out perpendicular to the rollers.

**Fix curves in the wire.** A broad curve in the flattened wire can be straightened; a kink cannot. To fix a broad curve, hold one end of the wire and use nylon-jaw pliers to grasp the wire just before the curve. Gently but firmly pull the pliers down the length of the wire to straighten the curve.

**Anneal the wire.** Flattened wire must be annealed to make it more flexible for weaving.

**NOTE:** To help with annealing wire, I make annealing spools out of copper couplings from the hardware store. I make a spool for each gauge of flattened wire I use; after annealing and neutralizing the wire on the spool, I use a permanent marker to record the wire's gauge on the inside of the spool. The wire can be stored on the spool until I'm ready to use it.

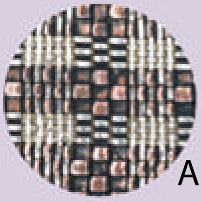
Use tweezers to dip the annealing spool and wire into liquid flux, and then place the spool on a clean firebrick. Place a second clean firebrick behind the spool to reflect the heat of the torch onto the spool. Use your torch to heat the inside of the spool until the flux turns glassy and the spool turns dull red **[2]**. Quench, pickle, and neutralize the spool.

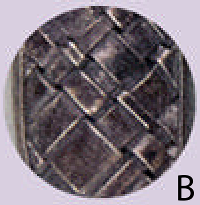
**NOTE:** Leftover pickle can damage the rollers of a rolling mill. To neutralize any pickle trapped in coiled wire, submerge the wire in a solution of baking soda and water for at least five minutes after pickling. When there are no more bubbles coming off of the wire, rinse it in fresh water and dry it.

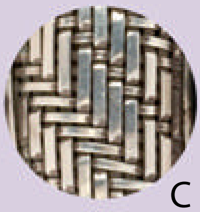
## weave variations

There are a number of ways to vary the appearance of woven metal, one of which is varying the width of the flattened wire by using 10–24-gauge wire, as I did in the process photos. There are other options, though:

- Use two or more different metals to create a striking color contrast. Sterling silver, copper, gold, and bronze wire all work well for metal weaving **[A]**.
- Use the woven metal sheet in different orientations. The earrings (*below*) were cut out on the bias (diagonal) **[B]**.
- Texture the wire as it is flattened in the rolling mill.
- Ply (twist together) finer wire and then flatten it to add another interesting texture in the weft wires.
- Incorporate weave structures, such as basket weave and twills **[C]**.


A


B


C

Here are some books that I find helpful for weave-pattern reference:
- *Mastering Weave Structure* by Sharon Alderman
- *Twill Basketry* by Shereen LaPlatz
- *African Basketry* by Paulus Gerdes

**Cut the warp wires.** For the warp (vertical) wires in the sheet demonstrated in this article, I flattened and annealed wires from 10- to 24-gauge (2.6 to 0.5 mm). To determine the length of the warp wires, add 1½ in. (38 mm) to the desired length of the finished weaving to allow for loom waste. (For example, to make a 2½-in. [64 mm] finished sheet, cut 4-in. [10.2 cm] warp wires.) Make a hook about ¼ in. (6.5 mm) long at the top of each warp wire.

**Secure the warp wires.** Use tin snips to cut a 3-in. (7.6 cm) piece of ¼ x 0.032-in. (6.5 x 0.8 mm) brass strip. Fold a piece of ½-in. (13 mm) double-sided tape in half lengthwise to cover both sides of the brass strip; this will help secure the warp wires.

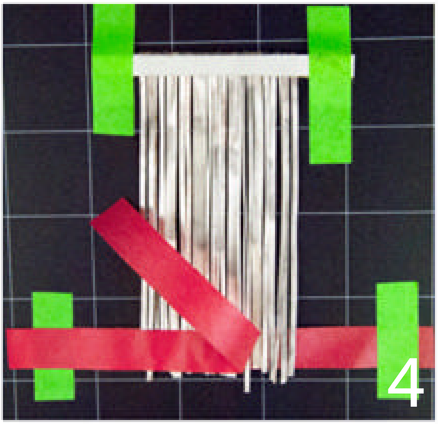
Hook two 18-gauge (1.0 mm) warp wires over the left side of the strip. The hooks of the warp wires shouldn't extend below the brass strip. These are your left selvage. (See "Basic Wire-weaving Vocabulary," *opposite page*.) Continue to hook a variety of gauges of warp wires over the strip in a random order **[3]** until you reach the desired warp width. Add two 18-gauge (1.0 mm) warp wires at the right side to create the other selvage. The selvage wires prevent the weave from unraveling; you'll cut them off of the final project.

Each warp wire should be straight and close to (but not overlapping) the adjacent warp wires. Once the warp wires are in place, use masking or artist's tape to secure the warp wires to the brass strip.

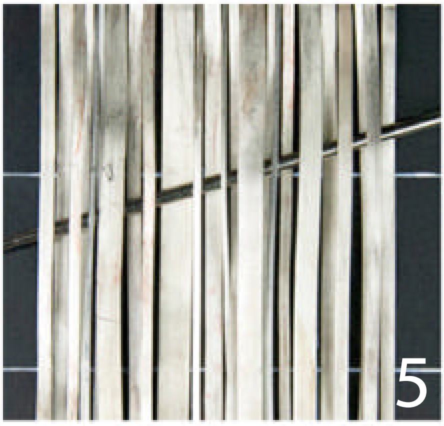
To help keep the warp wires straight, secure the bottom edges. Cut a piece of tape a few inches wider than the warp. Place this tape (shown as the red bottom layer in **[4]**) sticky-side up on a cutting mat. Secure the tape to the mat with two small pieces of tape (shown in green). Loosely place the bottom of the warp wires on the tape. Tape (also shown in green) both ends of the brass strip to the mat.

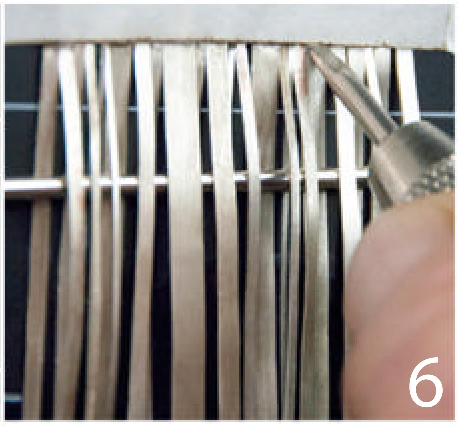
Straighten the warp wires on the (red) sticky tape; use the marked lines on the cutting mat to ensure that the wires are parallel. Lay another piece of tape (shown as the top layer of red), sticky-side down, across the bottom of the wires **[4]**. Remove the strips of tape securing the top and bottom of the loom to the mat.

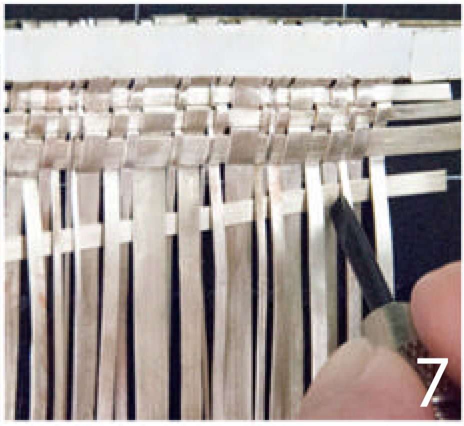
**NOTE:** Although the loom is no longer adhered to the cutting mat, continue to use


4

**Try adjusting the orientation of the woven sheet to create different effects. These earrings were cut on the bias (diagonal).**


5


6


7

the mat as your work surface. The marked lines will help you ensure the warp and weft wires stay straight. Also, it is a firm surface that still has a slight give, which will come in handy later when you score the warp wires.

**Cut the weft wires.** The length of the weft wires is the width of the loom plus ½ in. (13 mm). So, if your loom is 2 in. (51 mm) wide, cut your weft wires to 2½ in. (64 mm) long. Cut a variety of gauges of weft wires. Set aside four 18-gauge (1.0 mm) wires for the top and bottom weft selvages.

**Form the shed.** To create a plain weave, pick up every other warp wire with a weaving pick (I use an upholstery needle) along the entire width of the loom. Half of the warp wires should be on top of the needle and half should be below it, forming a shed **[5]**.

**NOTE:** The upholstery needle in the photos is about 5⁄64 in. (2 mm) thick and 6 in. (15.2 cm) long. You can use a diamond disk in a flex shaft or rotary tool to cut down longer upholstery needles.

**Score the warp wires.** To lock the weft wires in place and create a tighter weave, use a pressing tool to score the warp wires underneath the needle. Choose a pressing tool that matches the width of each warp wire. (I make my own pressing tools, but you can use small flat-head screwdrivers.) For the first shed, place the pressing tool at a 45° angle on the warp wire, just below the brass bar. Using steady pressure, rock the pressing tool towards the top of the loom to about a 90° angle **[6]**.

Unlike conventional weaving, you will work on both sides of the loom. Turn the loom over to the back, and score all of the warp wires that are under the needle. Then turn the loom front-side up again.

**Weave in the weft selvage wires.** Slide an 18-gauge (1.0 mm) weft selvage wire into the shed created by the needle. Make sure the wire extends evenly from both sides of the loom. Remove the upholstery needle. Turn the pressing tool on its side and use it to push the weft selvage wire up, snug against the brass strip.

**NOTE:** Use care when sliding the pressing tool; it's easy to let the tool slip, and it will scratch the wire.

# soldering

### toolbox, page 75

- Soldering/Annealing

### materials, tools & supplies

- Sterling silver sheet, 26-gauge (0.4 mm), amount determined by design
- Toothpick or spotter brush
- Soldering blocks: honeycomb and magnesia
- T-pins
- Shears or scissors
- Dapping block with punches (optional)

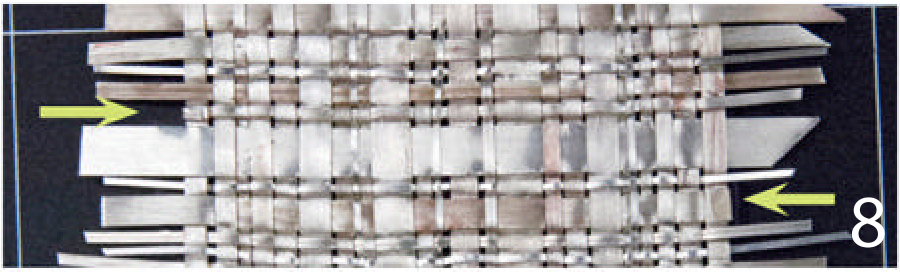
A woven-wire sheet can be the major element in a piece of jewelry or just an accent. It can be cut out like fabric to the desired size and shape.

Before cutting the woven sheet, you must first solder a "lining" of 26-gauge (0.4 mm) sterling silver sheet to it. This prevents the woven sheet from unraveling and gives it more structural strength. As with any soldering procedure, the weaving and liner must be flat, and meet flush at all points.

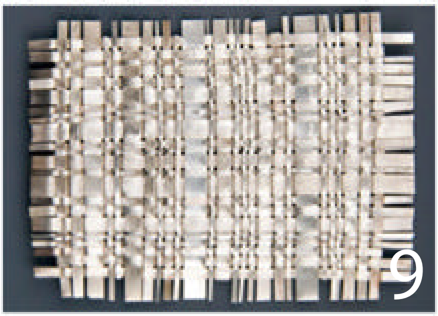
- Use a fine-tip permanent marker to trace the outline of the lining on the front and back of the woven sheet; be sure to avoid the selvages.
- Use shears to trim the woven sheet diagonally on two sides so that the lining can be held down by T-pins while you solder.
- Use a toothpick or spotter brush to paint a line of anti-flux on the front of the weaving just inside the marker outline. This prevents the solder from flowing too far into the woven structure **[A]**.

⚠ **SAFETY NOTE**: Be sure you have good ventilation if using water-based correction fluid as an anti-flux, since the fumes are toxic.

- Place a honeycomb soldering block on a magnesia soldering block and use T-pins to pin them together at the corners. Coat the tops of two additional T-pins with anti-flux **[B]**.
- Place the woven sheet face-down on the soldering block, and place the lining on top of it.
- Use the two T-pins you coated in anti-flux to secure the liner. The anti-flux



Process photos by Lindsay Pratt.



Score the wires now on top of the weft. Add a second 18-gauge (1.0 mm) weft selvage wire, and continue to add weft wires: Create a shed with the needle, score the warp wires from both sides, insert the next weft wire **[7]**, then repeat.

**Lock the edges.** While weaving, use your cutting mat guides and continually check to make sure the warp and weft wires stay perpendicular. Every few rows, use chainnose pliers to fold the end of a weft wire over the warp selvage to lock the weaving in place. Use wire cutters to trim the folded end of the weft wire to the width of the warp selvage **[8]**. Don't fold over both ends of the same weft wire.

**Finish the weave.** Continue weaving until the woven section is about 1 in. (25.5 mm) from the bottom of the loom. Leave enough room to add two 18-gauge (1.0 mm) weft selvage wires to the bottom of the weave. Remove the tape and the brass bar from the woven sheet.

Just as you locked in the weft wires, use chainnose pliers to lock in a few warp wires. Fold them over the top and the bottom weft selvages, and then use wire cutters to trim them to the width of the weft selvage **[9]**.

Use a brass brush and pumice powder to clean the sheet thoroughly. If there is any sticky residue from the tape, use acetone to remove it.

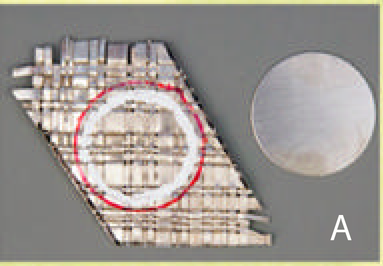
To condense the weave structure and lock everything in place, either lightly run the sheet through a rolling mill, or sandwich the woven sheet between two wood blocks and hammer it.

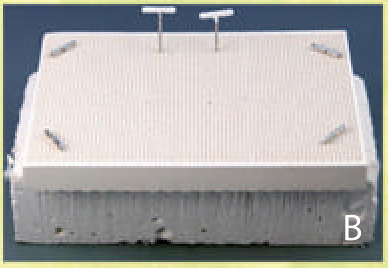
## ASK THE ARTIST: JEANIE PRATT

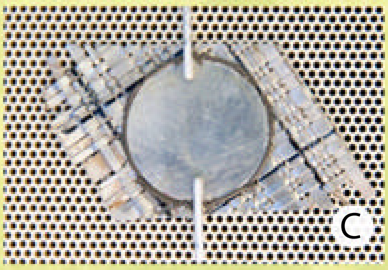
### What is your favorite unexpectedly useful tool?

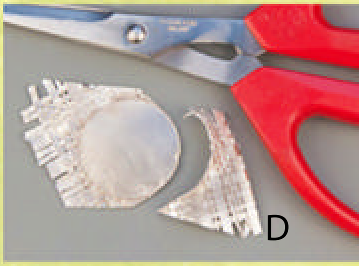
"A 6-in. (15.2 cm) diamond sanding disk (two-part polishing-head system with a sponge polishing pad and 320-grit 3M diamond micro-finishing film disk), which replaces one of the grinding wheels on my bench grinder. I use it constantly to quickly shape the edges of metal and enameled pieces. It is also handy to make a straight edge on sheet metal and bezel-wire ends. While sanding, I hold the pieces with an Atlas 370 Nitrile Touch glove. These gloves are great because they protect from abrasion, fit very well, and come in great colors!"

Contact: www.jeaniepratt.net



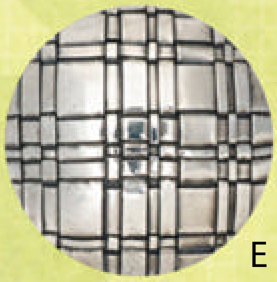






prevents the T-pins from soldering to the liner.

- Run a line of paste solder on the weaving, along the edge of the liner. Paste solder combines solder and a flux/binder and typically comes in a syringe for easy application **[C]**.
- Solder carefully. If necessary, use a soldering pick to press lightly on the liner for better contact with the weaving.
- Pickle the assembly, soak it in a solution of baking soda and water, rinse it in plain water, then dry it.
- Use shears or inexpensive scissors to trim the woven wire edges to match the liner **[D]**.
- Check for loose wires and resolder as necessary.
- File the edges to remove any burrs and then sand them smooth.
- If desired, dap or form the woven element, then patinate it **[E]**.



# Tactics for Tool Storage: HAMMERS

*Use easy-to-find hooks and clips to transform wasted space into an efficient tool-storage system.*

**by Michael David Sturlin with Annie Pennington**

You don't need elaborate or expensive hammer racks to keep your most-used mallets, hammers, and mandrels close at hand. Take a cue from home- and garage-organization systems to streamline your workspace — it's easier than you might think. The key benefits of creating a do-it-yourself tool-hanging system are convenience, customization, and affordability.

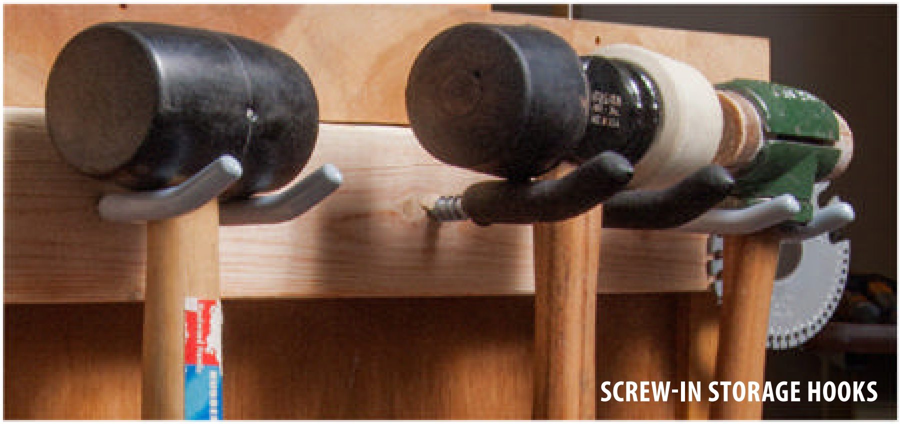
**NOTE:** We mounted each tool-hanging system on a 1 x 3-in. (25.5 x 76 mm) piece of wood, which we then attached to the side of the *Art Jewelry* workbench (this had the added benefit of allowing us to use the mounting screw on each end of the board to hang other tools). You can do this, or mount the hooks directly on the side of your bench or on a nearby wall.

## Hooks and Clips

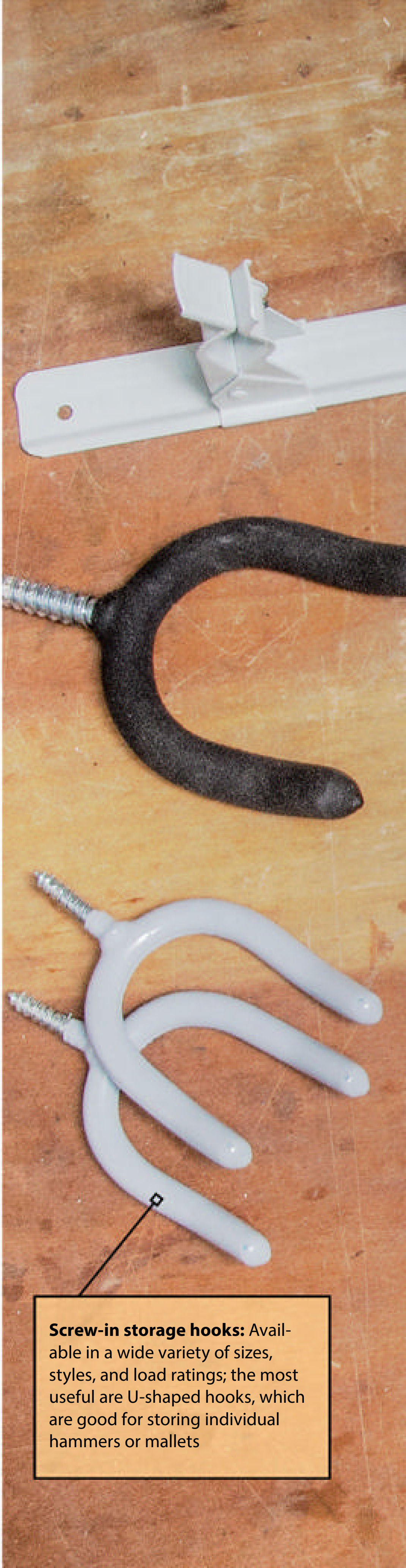
There is a huge variety of screw-in hooks and clips available (*right*), so choose the type that will work best for your specific tools. Regardless of which type you use, space them far enough apart that the hammers' heads won't touch.

Test the fit of your tools in the hooks or clips. The hooks or clips must hold the tools securely, but it shouldn't be overly difficult to insert and remove them.

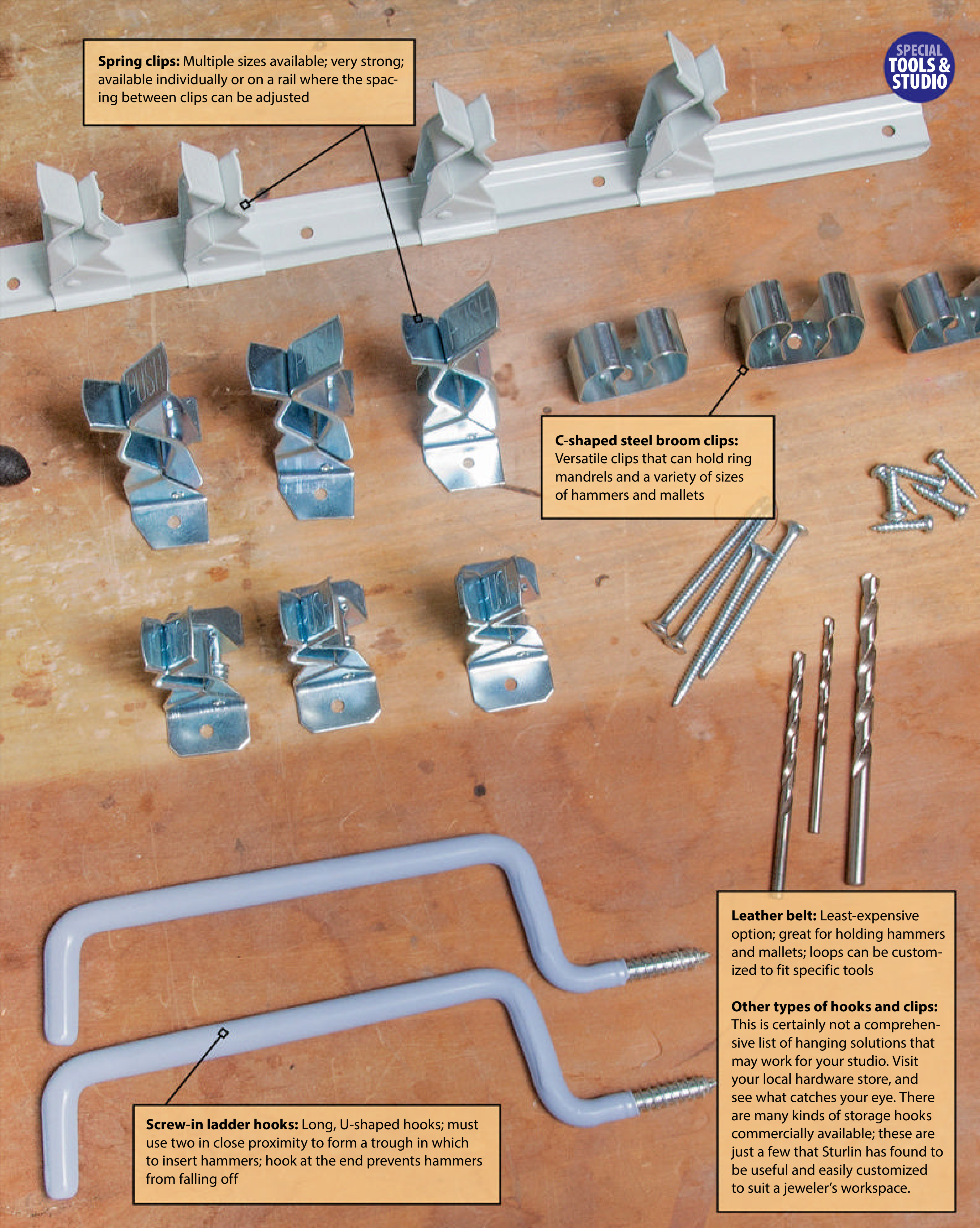
Lay out your hammers, mallets, and other tools in the arrangement you want. Make sure they won't touch when they're hung. You can stagger the hooks or create multiple rows, if you desire. Determine the spacing between them, and then mark the wood where you will drill the pilot holes, using the hooks or clips as a guide.



SCREW-IN STORAGE HOOKS



**Screw-in storage hooks:** Available in a wide variety of sizes, styles, and load ratings; the most useful are U-shaped hooks, which are good for storing individual hammers or mallets



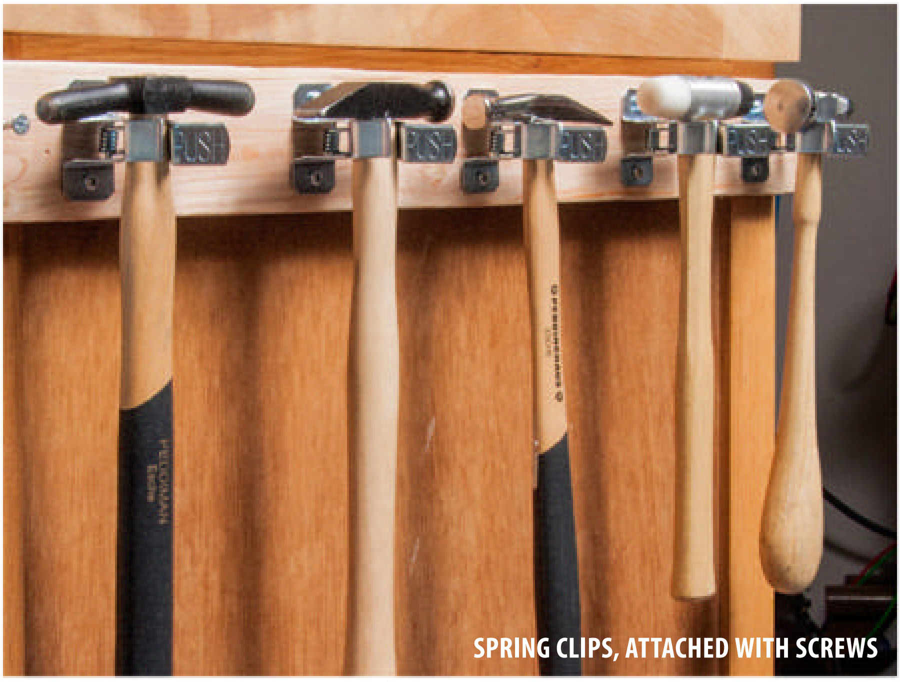
**Spring clips:** Multiple sizes available; very strong; available individually or on a rail where the spacing between clips can be adjusted

**C-shaped steel broom clips:** Versatile clips that can hold ring mandrels and a variety of sizes of hammers and mallets

**Leather belt:** Least-expensive option; great for holding hammers and mallets; loops can be customized to fit specific tools

**Other types of hooks and clips:** This is certainly not a comprehensive list of hanging solutions that may work for your studio. Visit your local hardware store, and see what catches your eye. There are many kinds of storage hooks commercially available; these are just a few that Sturlin has found to be useful and easily customized to suit a jeweler's workspace.

**Screw-in ladder hooks:** Long, U-shaped hooks; must use two in close proximity to form a trough in which to insert hammers; hook at the end prevents hammers from falling off


SPRING CLIPS, ATTACHED WITH SCREWS

These hanging systems would go great on a dedicated forming station, wouldn't they? You're in luck! See Michael David Sturlin's column "Stumped! Setting Up a Forming Station," *page 24*, to learn how to build your own all-in-one forming and forging station.

**NOTE:** The screws used to attach the hooks and clips are different sizes (and in the case of U-shaped and ladder hooks, the screw is part of the hook itself); follow your hooks' instructions to use a handheld power drill and the appropriate-size drill bit to drill a pilot hole for each hook.

Use the power drill and screws (often included with the clips and hooks) to attach the hooks and clips to the wood.

## Leather Belt

Find an old leather belt at a thrift store (or repurpose that ratty belt that's been hiding in the back of your closet for years). Don't cut it to the width of your bench yet, since you'll want to have excess length to accommodate the loops for securing the hammers and mallets.

Lay out the spacing of the hammers you want to hang. For the side of *Art Jewelry*'s workbench, we determined that we had room to hang four larger hammers and mallets without the heads touching.

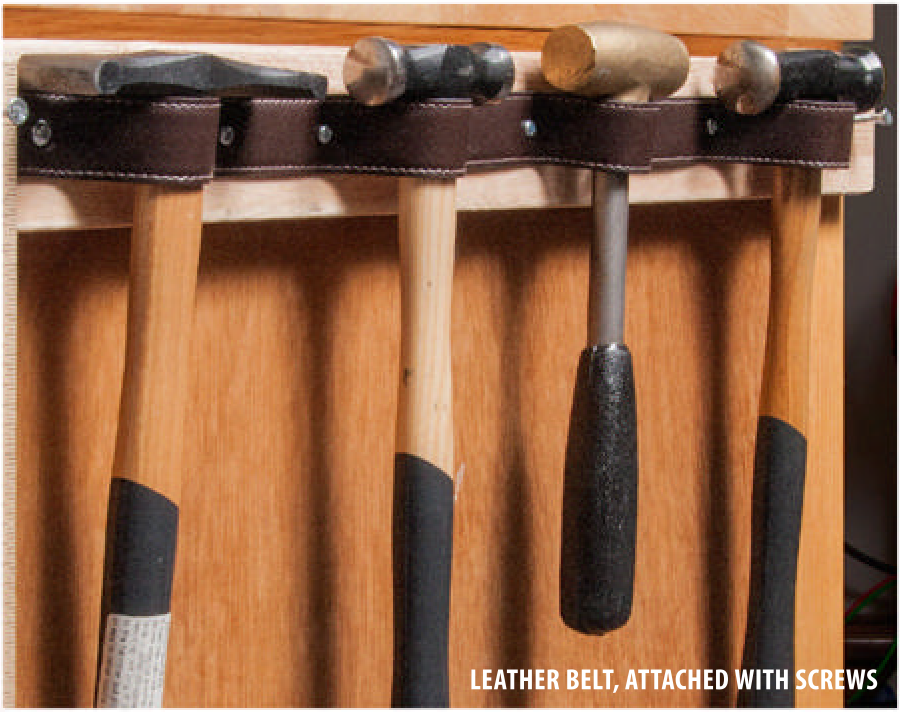
Use a screw to attach one end of the belt to the wood. Hold a hammer or mallet up to the wood under the leather and next to the screw. Loop the belt over the handle, and adjust the size of the loop so that the handle can be removed. Then, secure the belt to the wood with a second screw to form the first loop.

**NOTE:** The loop needs to be large enough that the hammer or mallet handle can easily be inserted and removed, but tight enough that the head can't slip through. Keep in mind that the leather will stretch out over time and with use, so the loops should be a little tight at first. The more you use them, the easier it will be to insert and remove the tools.

You need to space the hammers so that their heads don't hit, so don't form a second loop directly next to the first. Add a third screw about 1–2 in. (25.5–51 mm) from the second screw. This distance is entirely dependent on the type and size of hammers you'll hang next to each other. Place the second hammer where you want it, and make the second loop.

Repeat to add additional loops, checking the size and spacing as you go. Use scissors to trim the belt after you secure the final loop.

©istock.com/Hofmeester


LEATHER BELT, ATTACHED WITH SCREWS

*"The human body has*
*two ends on it: one to*
*create with and one to sit*
*on. Sometimes people get*
*their ends reversed."*

—Theodore Roosevelt

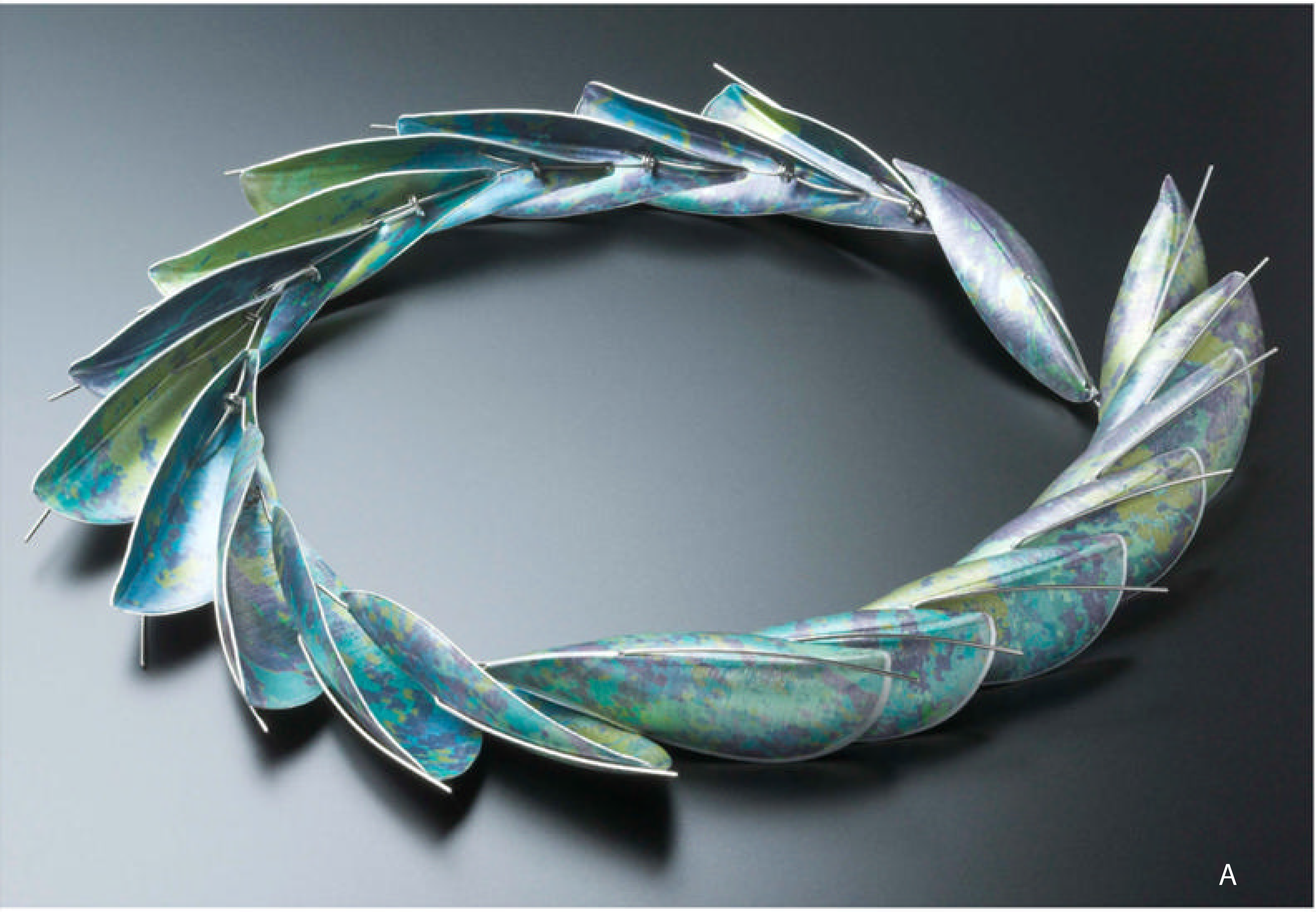
# GALLERY

**[page 41]** When her designs were described as "too industrial," **Martha Seely** set out to create pieces with elegant lines yet still using her beloved cold connections. These graceful sterling silver *Metamorphosis* earrings with freshwater pearls were the result. 1 in. (25.5 mm) long. www.marthaseely design.com. Photo by Robert Diamante.

**[A]** Fascinated by the way natural forms such as shells and leaves are endlessly repeated, yet never identical, **Jane Adam** created elements that are the same size and shape, yet hang differently and display different colorings. Her *Large Blue Scale Necklace*, of dyed anodized aluminum and stainless steel wire, is 22½ in. (57.2 cm) long. www.janeadam.com. Photo by Joel Degen.

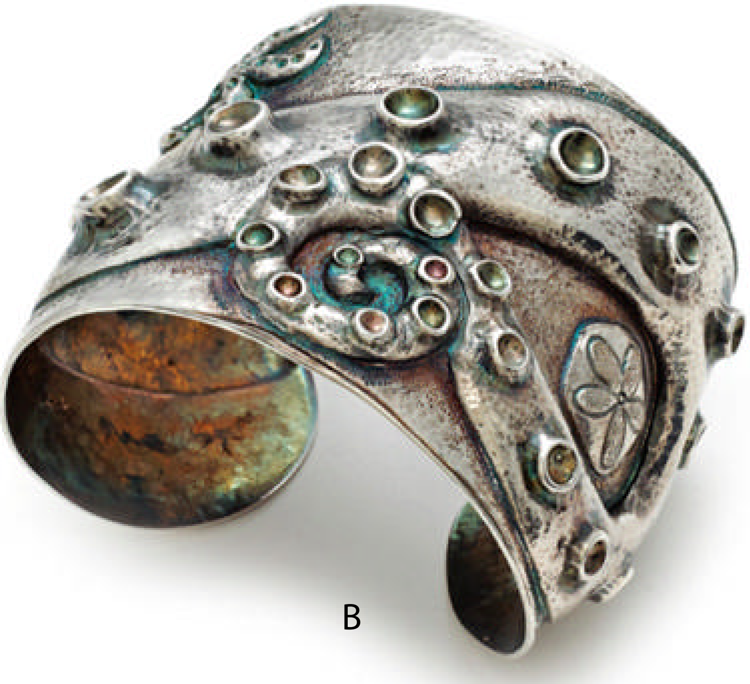
**[B]** For her Facebook group dedicated to chasing and repoussé, **Laurie Jane Kern** posed a design challenge, asking her fellow members to create an octopus-themed piece of jewelry. She answered the challenge herself with this cuff, *The Tenacious Tentacle*, of patinated sterling silver. www. theadventuroussilversmith.com.

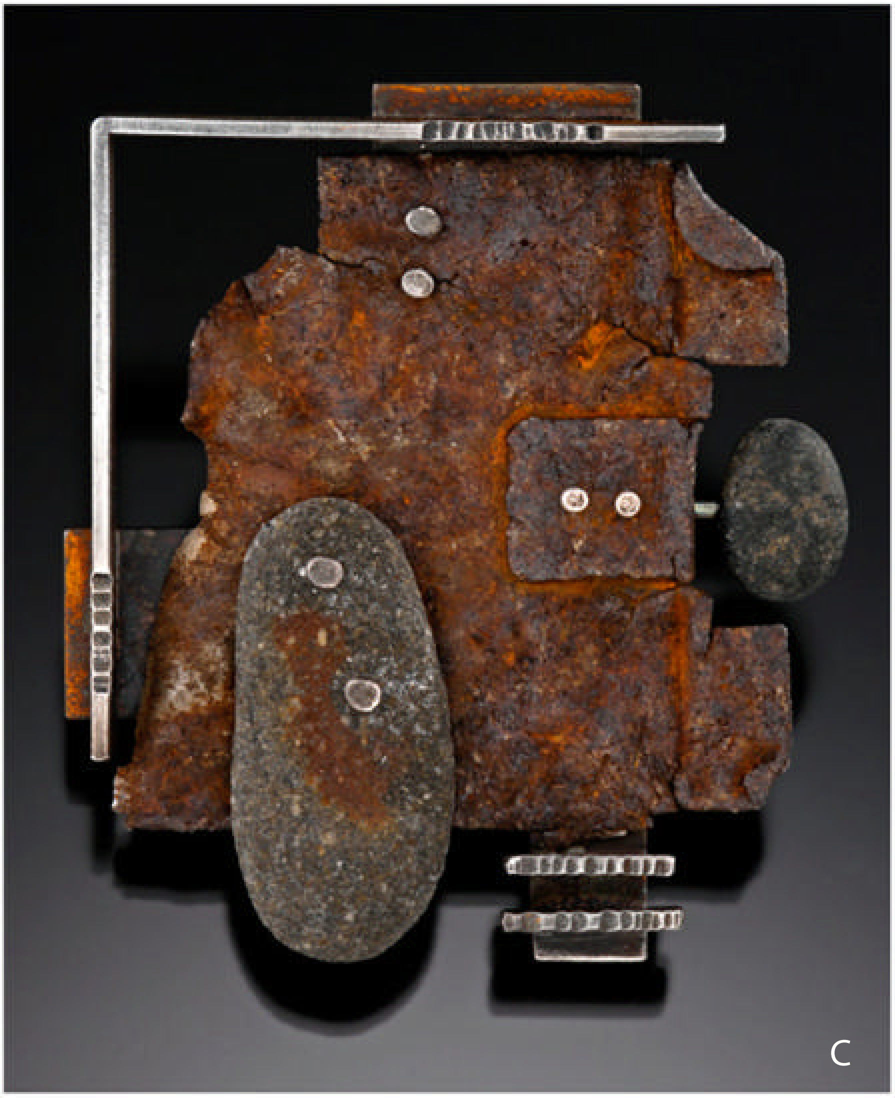
**[C]** While out on bike rides, **Connie Ulrich** spotted scraps of rusted steel with fascinating shapes and amazing natural patinas. She collected the intriguing scraps, but they languished until

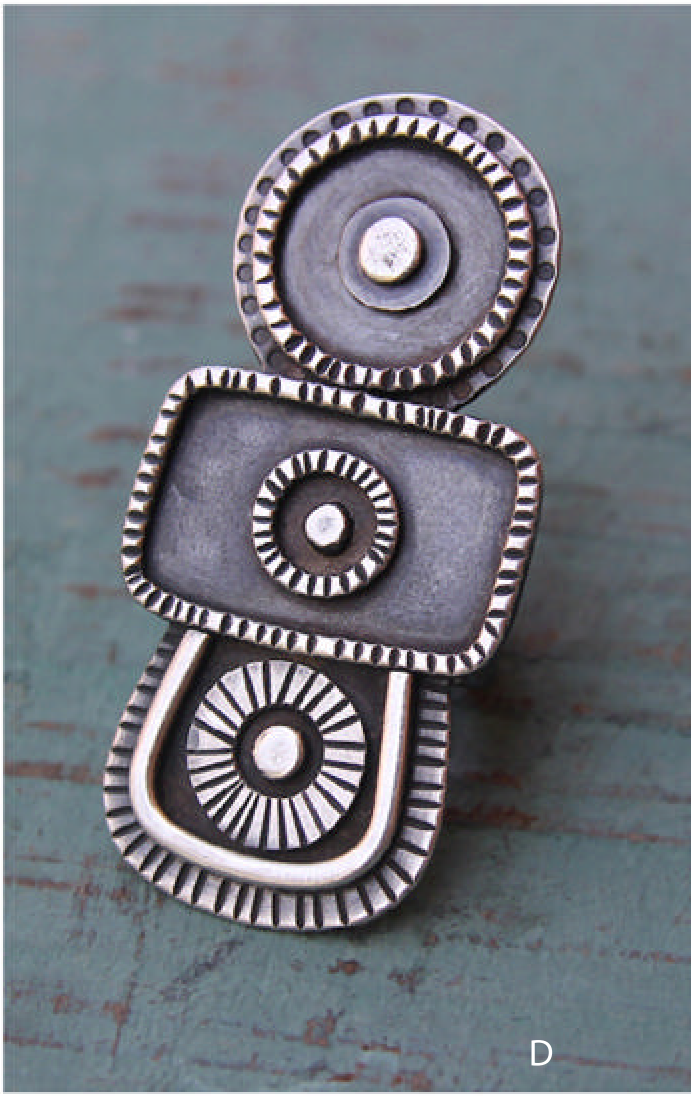


Ulrich began assembling them into designs that she called her "Road Kill" series. www.connieulrich.com. Photo by Larry Sanders.

**[D] Musibatty** sought to create a simple form embodying strength, grace and elegance when she designed her *Totem* ring. She used sterling silver for the ring, which she cut, carved, and soldered, then darkened with a dramatic patina. www.musibatty.com. Photo by the artist.





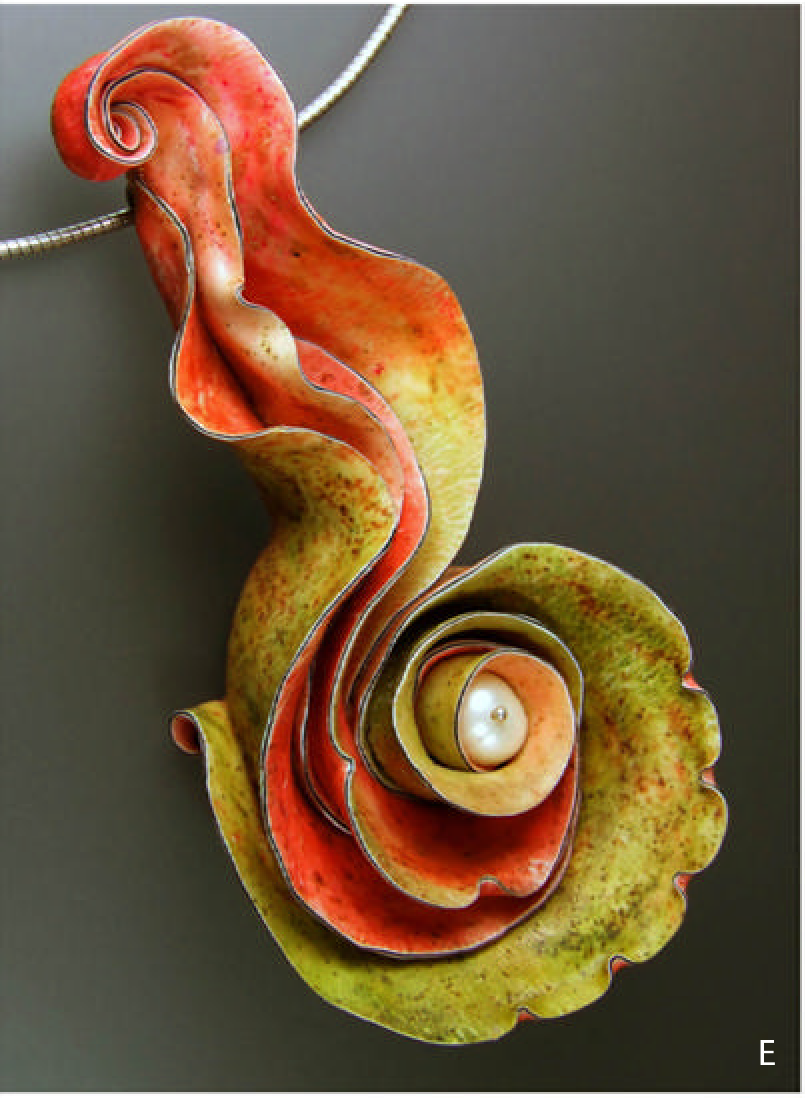


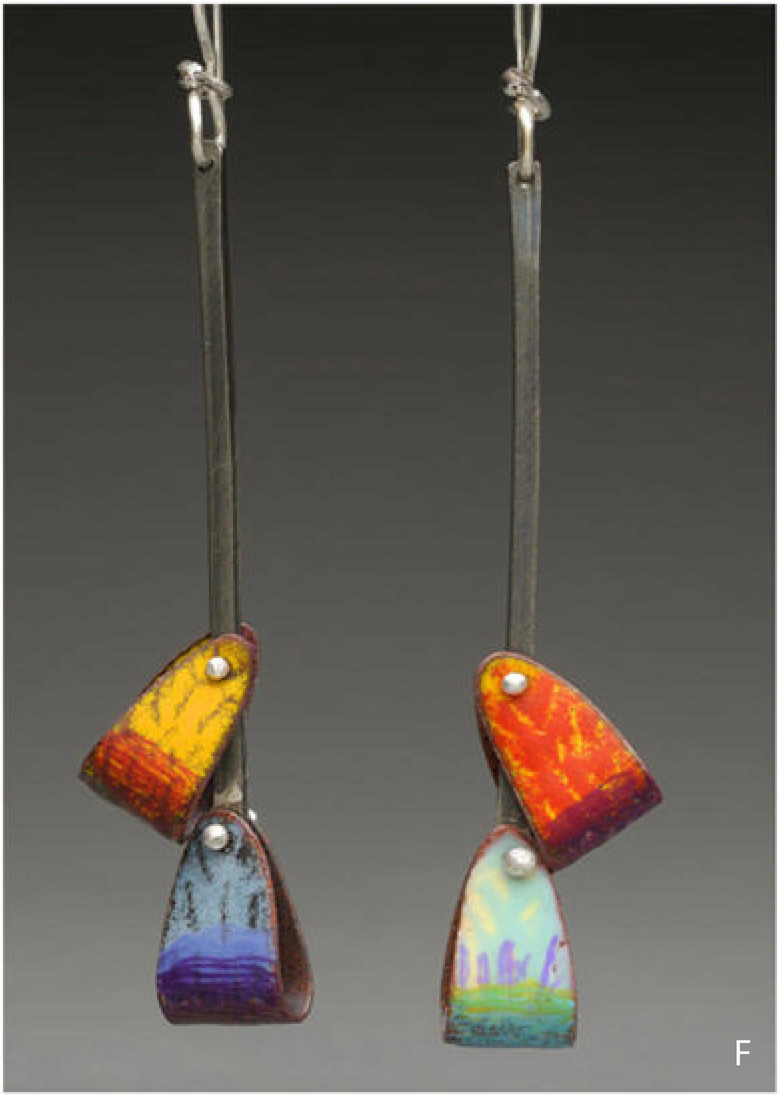
**[E]** Seeking to capture the delicacy and vibrancy of organic sea life as it is swayed by ocean currents, **Jana Roberts Benzon** used polymer clay and sterling silver to frame a single freshwater pearl for her *Organic Sea Sculpture* pendant. 9 cm ($3\frac{9}{16}$ in.) long. www.janarobertsbenzon.com. Photo by the artist.

**[F]** Not satisfied with just one source of color, **Lauren Pollaro** started her *Enamel Drop Earrings* by torch-firing vitreous enamel onto etched copper, then accentuated the color and texture with Prismacolor colored pencils. The finished earrings are ½ x 2½ in. (13 x 64 mm). www.laurenpollarojewelry.com. Photo by Charley Freiberg.

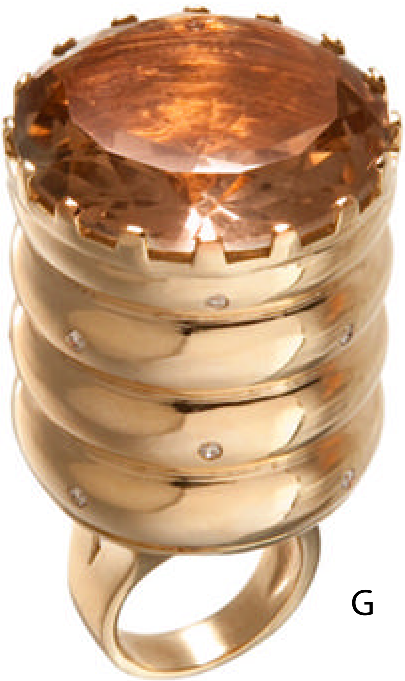
**[G]** Engaged and inspired by the bold, outrageous fashion sense of Lady Gaga, **Orit Harel** created a ring that would suit the sensibilities of the pop icon. Her *Chichi* ring, of cast 14k yellow gold and set with diamonds and smoky quartz, stands an impressive 2 in. (51 mm) above the finger when worn. www.tirojewelry.com. Photo by Wolf Photography.

**[H]** Fascinated with transparency, yet seeking a way to give transparent jewelry a "soul," German artist Kathrin Neumaier discovered her special technique for adding a delicate "veil"


E


F

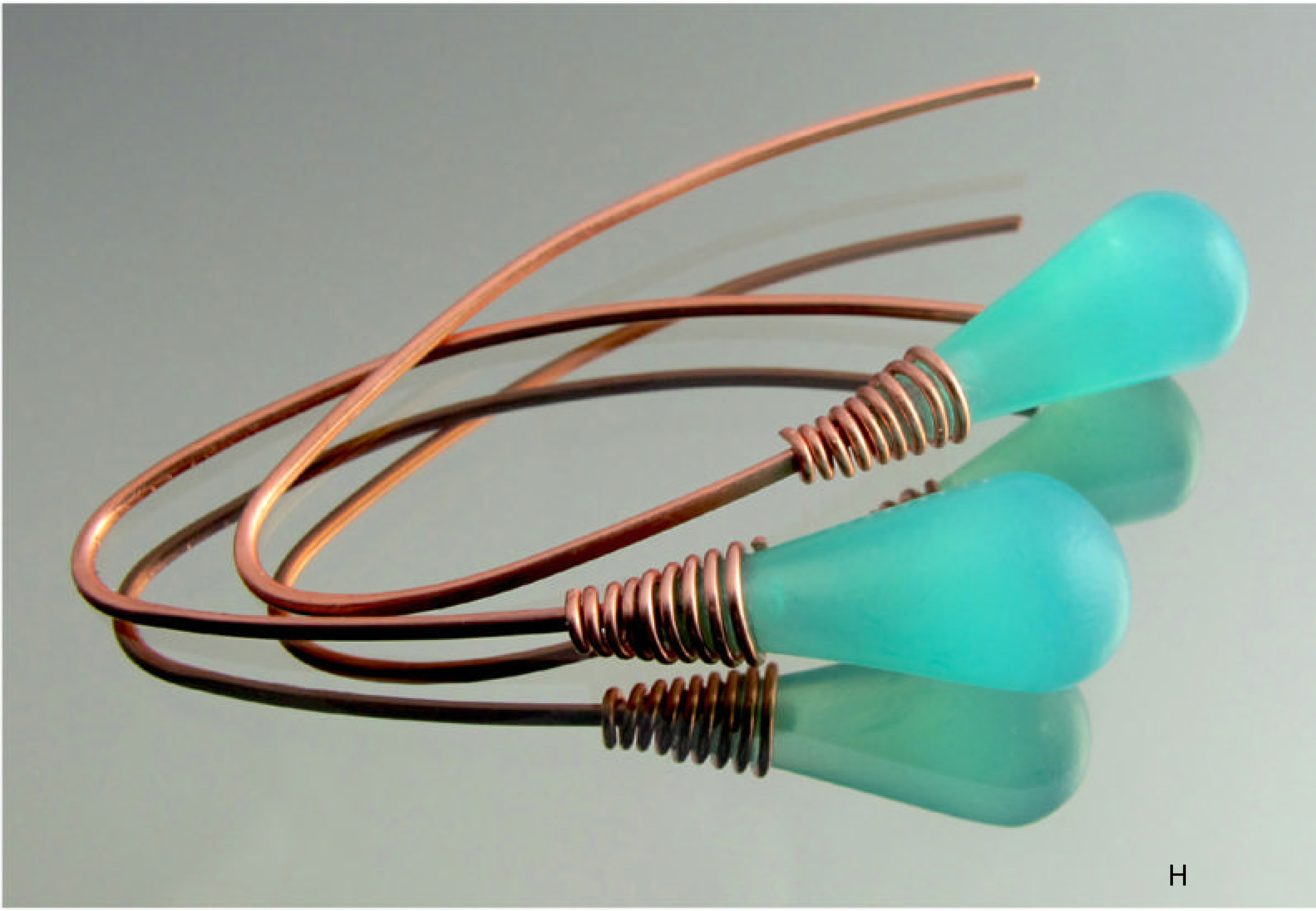
to translucent polyer clay by accident. Her *Kupfer-Blau* ("Copper Blue") earrings are made of polymer clay, decorating chalks, and copper wire. 4 cm (1⁹⁄₁₆ in.) long. www.flickr.com/photos/ilex123/. Photo by the artist.


G

## send us your gallery submissions

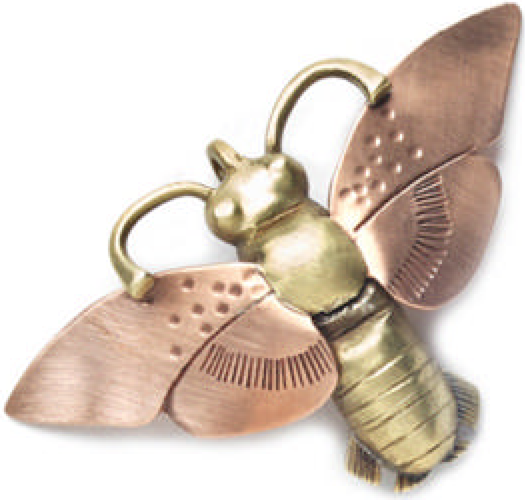
*For our guidelines, go to* ***www.artjewelrymag.com/submit****, or send an email to* ***submissions@artjewelrymag.com****.*

**want more inspiration?** You can see these and over 450 other pieces that have been featured in our Gallery at **www.artjewelrymag.com/gallery**.

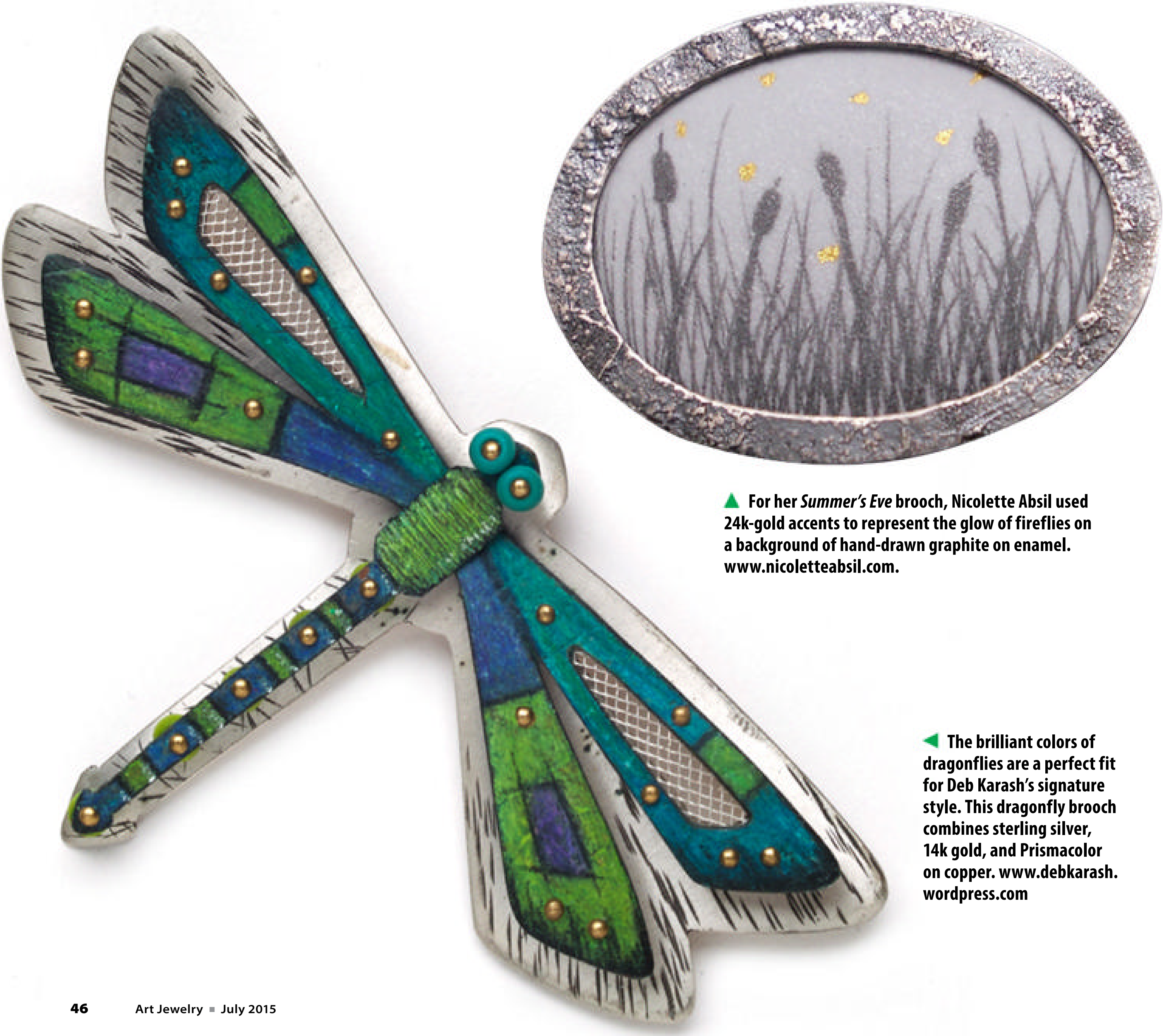

H

# An Affection for INSECTS

As long as human beings have been creating personal adornment, they have been using imagery from the insect kingdom to do so. It's no surprise that insects, with their infinite variations, have fascinated artists — there are over 350,000 varieties of beetle alone! Just as her own designs are informed by her love of — and research into — entymology, our cover artist Jeanie Pratt has collected the work of other contemporary makers who share her enthusiasm. Here are just a few of the pieces from her extensive collection.

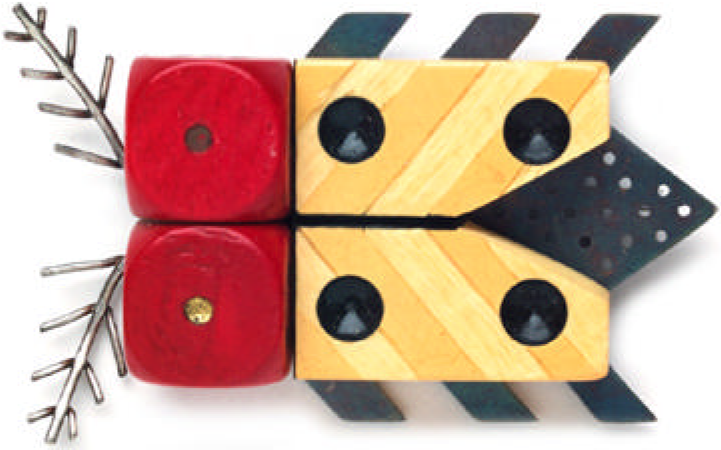


▲ **The brooch that started it all: a hand-fabricated moth brooch in brass and copper by Cornelius Jakob Van Dop. Pratt's husband bought this brooch for her in a gallery in St. Ives while the couple were living in Cornwall, England. www.newcraftsmanstives.com.**

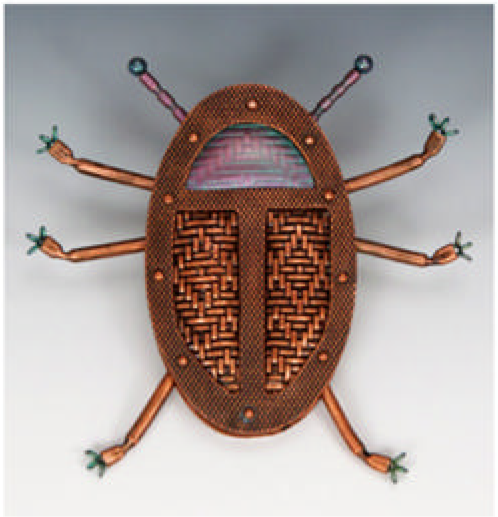


▲ **For her *Summer's Eve* brooch, Nicolette Absil used 24k-gold accents to represent the glow of fireflies on a background of hand-drawn graphite on enamel. www.nicoletteabsil.com.**

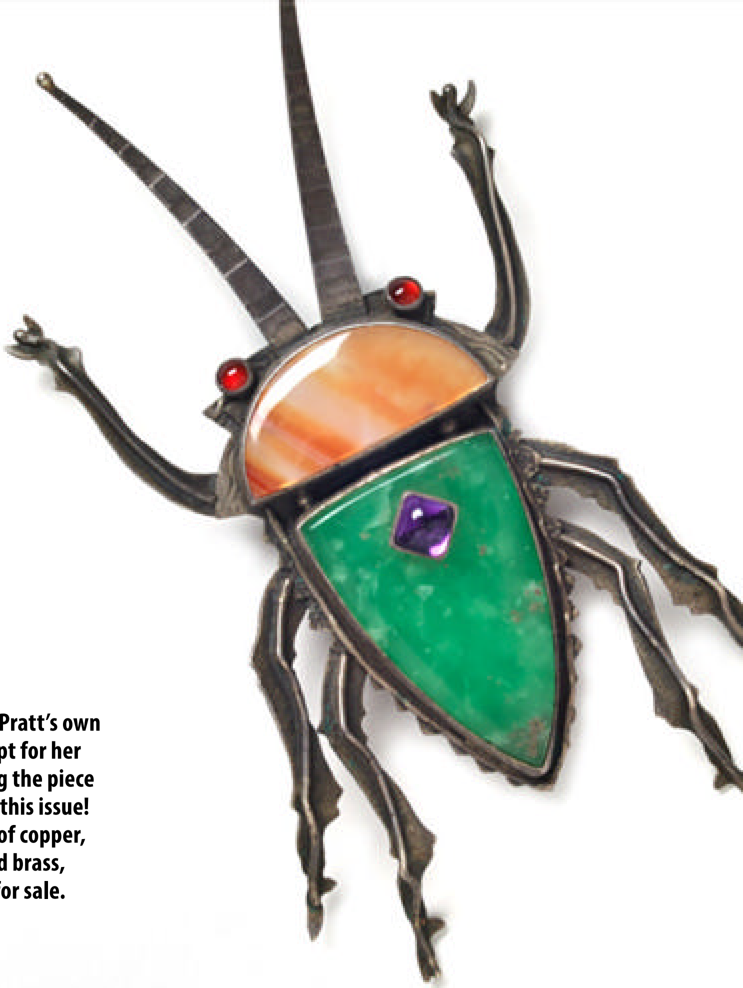
◀ **The brilliant colors of dragonflies are a perfect fit for Deb Karash's signature style. This dragonfly brooch combines sterling silver, 14k gold, and Prismacolor on copper. www.debkarash.wordpress.com**



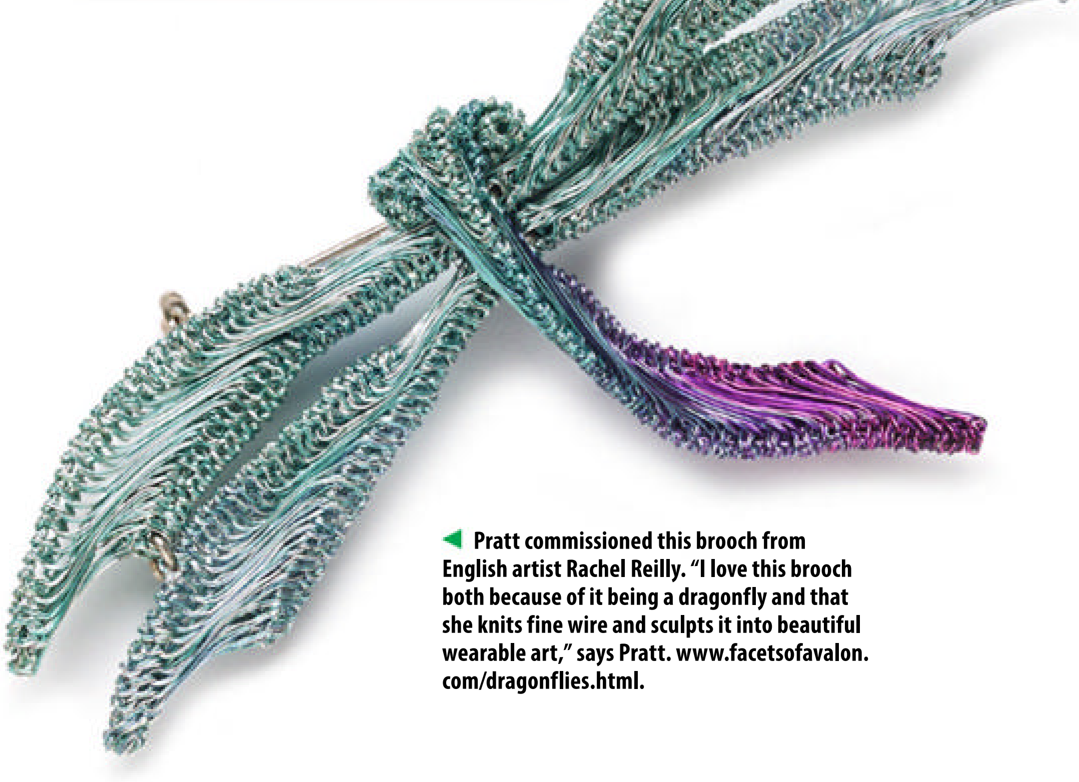
▲ *Domino Bug Brooch*, one of two pieces in Pratt's collection by Lisa and Scott Cylinder. The pair specialize in transforming antique found objects into modern jewelry designs; this bug incorporates old game pieces — dominos and dice. www.lisaandscottcylinder.com.



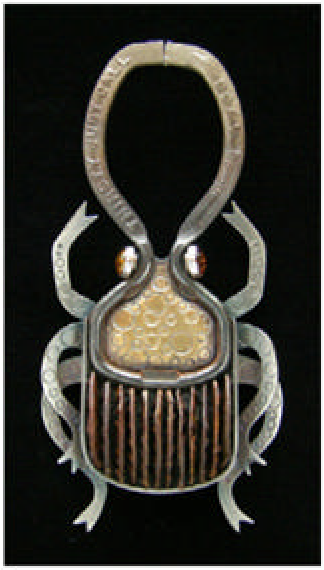
◀ There are a few of Pratt's own pieces that she has kept for her collection — including the piece that is on the cover of this issue! This *Jitterbug* brooch, of copper, anodized niobium, and brass, is another that is not for sale. www.jeaniepratt.net.



▲ One of two pieces that Pratt owns by Montana lapidary and jewelry artist Jim Dunakin. dunakindesign@itstriangle.com.



◀ Pratt commissioned this brooch from English artist Rachel Reilly. "I love this brooch both because of it being a dragonfly and that she knits fine wire and sculpts it into beautiful wearable art," says Pratt. www.facetsofavalon.com/dragonflies.html.

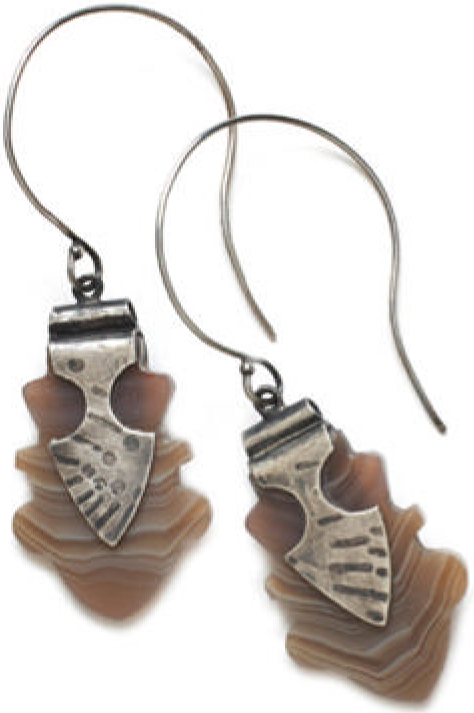


▲ *Thirsty Beetle Brooch*, by Lisa and Scott Cylinder, made using an antique bottle opener, beer bottlecaps, amber, sterling and nickel silver, and bronze.

# Fold-over Earrings

**by Marthe Roberts/Shea**

The settings for these earrings are designed to highlight the individual stone. The metal that folds over the top of the stone provides all kinds of possibilities for interesting shapes. Texture it, patinate it, or leave it plain or shiny — all are great options for an extraordinary result. The stones in this project were cut to my specifications, but if you don't know a lapidary, don't worry. Any flat or slightly domed stone will work.



## materials

- Stones: flat or slightly domed, 2
- Sterling silver sheet: 24-gauge (0.5 mm), amount determined by design
- Sterling silver tubing: 2.57 mm diameter, heavy walled, amount determined by design
- Sterling silver wire: 20-gauge (0.8 mm), 6½ in. (16.5 cm)

### toolboxes, *page 75*

- Sawing/Piercing
- Soldering/Annealing
- Wirework

### tools & supplies

- Digital calipers
- Paper
- Texturing tools (optional)
- Cyanoacrylate adhesive (superglue)
- Acetone-based nail-polish remover
- Patina (optional)
- Muslin buffing wheel, tight weave, 16-ply with polishing compound; pink silicone polishing wheel for use with a flex shaft (optional)
- Cotton manicure swab (optional)

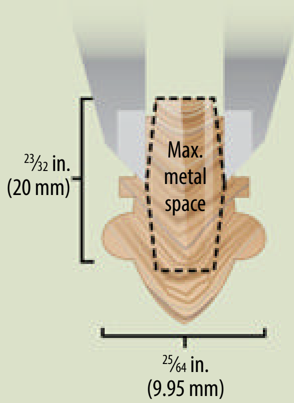
Find out where to buy supplies, *page 79*
See Safety Basics, *page 75*

## BASICS & VIDEOS

| **Learn fundamental techniques in these bonus tutorials:** | B | 🎥 |
|---|---|---|
| Basic sawing of metal | ● | ● |
| How to file | | ● |
| Lighting and using a torch | | ● |
| Sweat soldering | | ● |
| Pickle basics | ● | ● |
| Making jump rings | | ● |
| Opening and closing a jump ring | | ● |
| Balling the end of wire | | ● |
| Polishing metal | ● | |
| Patinating with liver of sulfur | ● | ● |

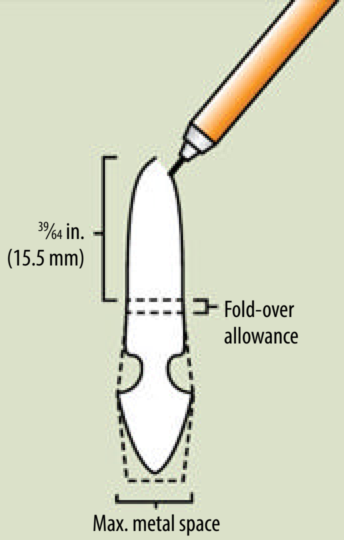
**B Basics, *page 73***
**🎥 Videos, www.artjewelrymag.com/videos**

## FOLD-OVER ELEMENTS

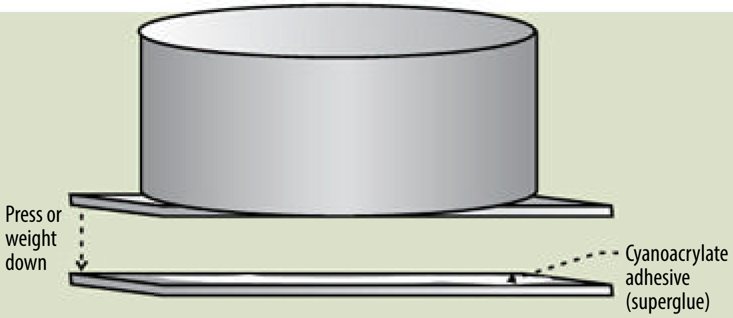


**1** Use digital calipers to measure the desired height and width of the metal you want on the front of your stone; the maximum metal space. I wanted the metal to complement the cut of the stone and still allow light to pass through it.

**NOTE:** The following measurements are for my stone. Adjust the size and shape to suit yours. My stone is ¾ in. (19 mm) wide, but I wanted the metal on the front of the stone to be 25⁄64 in. (9.95 mm) wide. My stone's height is 1⅛ in. (29 mm), so I measured 23⁄32 in. (about 20 mm) for the metal.



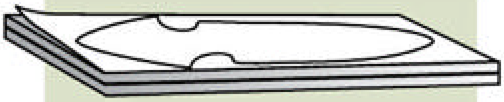
2 Create a design that works with the cut of your stone, and draw it on a piece of paper. Since this piece will wrap over the top of the stone and onto the back, extend your drawing to allow for the thickness of the stone (fold-over allowance). Add 1 mm to the thickness of the stone to allow for the metal and the space it will take up when folded. Then, add however much metal you want on the back of the stone (I extended mine to 39⁄64 in. [15.5 mm]).



3 Use cyanoacrylate adhesive (superglue) to attach two 1⅝ x ⅜-in. (41 x 9.5 mm) pieces of 24-gauge (0.5 mm) sterling silver. Try not to let the adhesive seep over the sides of the sheets.

**NOTE:** Texture your metal sheets before you glue them together (backs or fronts together) and cut out the shapes. Texturing cutout pieces can distort their shape.

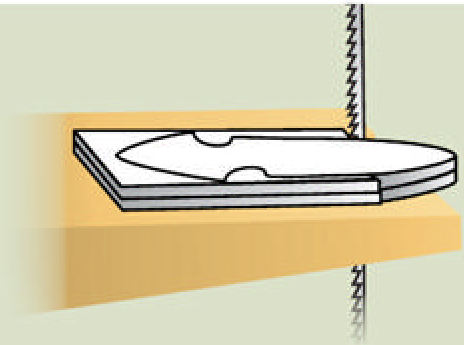
If the pieces don't lie perfectly flush, use a small bench block to help press the two pieces together as the glue sets. Let the glue set for a few minutes.



4 Apply a thin coat of rubber cement to the top surface of the sheets. Let it dry.

Cut out your paper template, leaving a little margin around it. Apply a thin coat of rubber cement to the back of your template, and let it dry.

When the rubber cement on both the metal and the template is dry, place the template on the metal and use your finger to burnish it onto the surface of the metal.

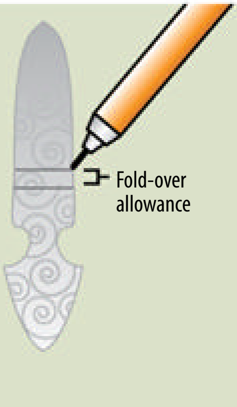


5 Use a jeweler's saw with a #2 blade to cut around the perimeter of the template. Keep your saw blade perpendicular to the sheets so that both cutout pieces will be the same size.

Soak the glued sheets in acetone-based nail-polish remover until the glue softens enough to separate the two pieces of silver (the paper should peel off easily). Roll your finger over the surface of the metal a few times to remove any residual rubber cement. (It will ball up and peel off.) Soak the two pieces in the nail-polish remover until any remaining adhesive dissolves.

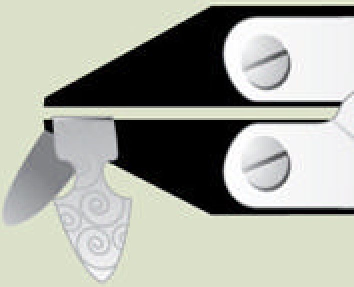
Use a #2-cut half-round hand file to remove any burrs or rough edges from both pieces. Set one piece aside.

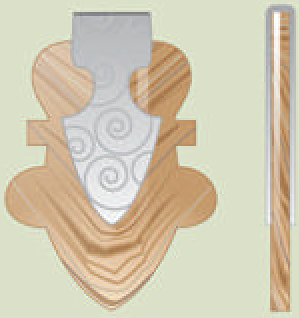
**NOTE:** Each step from here should be repeated twice to assemble both earrings at the same time.



6 Measure a metal piece again, and scribe two lines delineating the top and bottom of the fold-over allowance.

7 Line up one scribed line with the edge of a jaw of a pair of chainnose parallel-jaw pliers. Close the plier's jaws to anchor the piece, and fold the metal down at the scribed line to make a 45° bend. Repeat for the other side of the fold-over section.

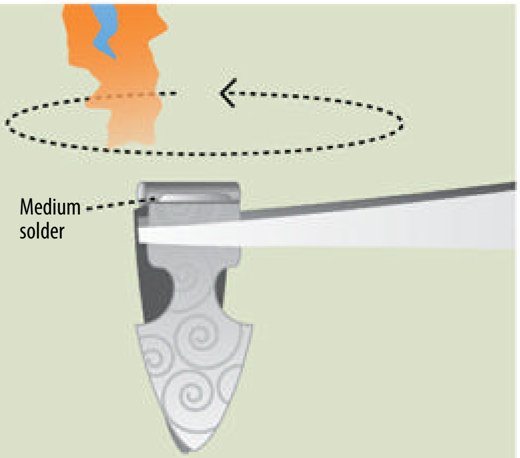




**8** Continue to bend the metal until the stone fits snugly into the fold.

**NOTE:** Before you bend the metal to 90°, test your stone in the fold to make sure that it fits. If you find that it binds (is too tight), expand the fold a bit with the parallel-jaw pliers.

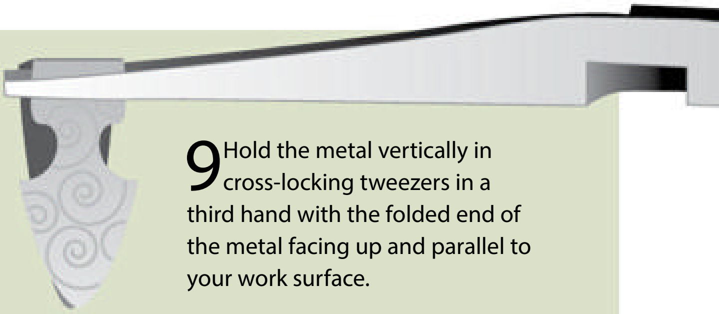
Remove the stone, and set it aside.



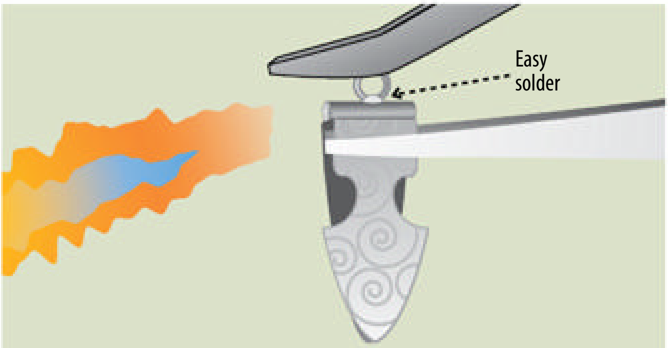
**10** Cut a piece of 2.57 mm diameter heavy-walled sterling silver tubing; the length of the cut tube should match the width of the metal at the folded end. Place the tube on the soldering board, apply flux, and sweat a small amount of medium solder onto the length of the tube.

Rest the tube solder-side down on the flat surface of the folded metal held in the tweezers. Apply flux, and heat the assembly with a soft, bushy flame until the solder reflows.

**NOTE:** To prevent the tube from jumping off of the top of the folded metal, hold the flame near, but not on the metal. Warm the assembly evenly until the flux starts to bubble, turns white, and then becomes glassy. At this point, the tube will stay in place, and you can aim your flame more directly at the assembly until the solder flows.



**9** Hold the metal vertically in cross-locking tweezers in a third hand with the folded end of the metal facing up and parallel to your work surface.



**11** Make a 5⁄64-in. (2 mm) inside-diameter (ID), 20-gauge (0.8 mm) sterling silver jump ring. Set it on a soldering board, apply flux, and use a liberal amount of easy solder to solder it closed. Quench, pickle, and rinse the ring.

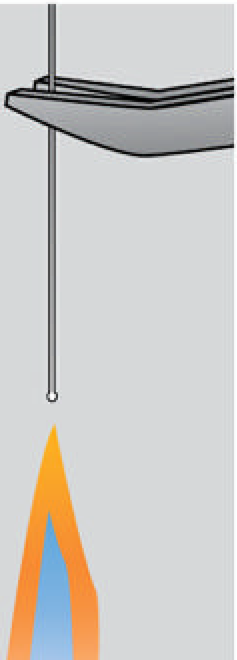
Grasp the jump ring with a second pair of cross-locking tweezers. Make sure the soldered join is positioned at the bottom of the ring.

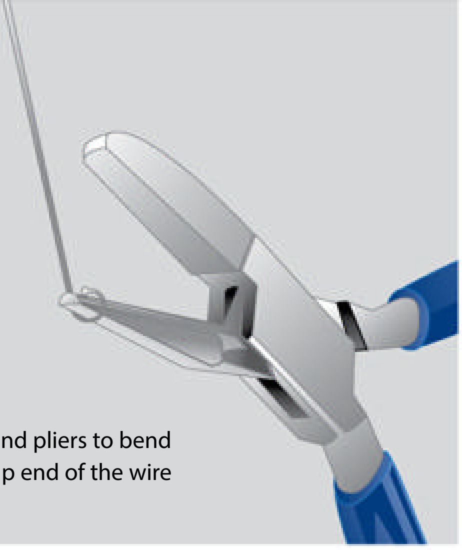
Use a bushy flame to heat the assembly held in the third hand. Gently position the jump ring centered on and parallel to the tube. Don't press the jump ring down, just lightly hold it against the tube until the solder reflows. Pickle, rinse, and dry the assembly.

## EAR WIRES

**12** Cut a 2½-in. (64 mm) piece of 20-gauge (0.8 mm) sterling silver wire. Roll the wire back and forth between two steel bench blocks to straighten and work-harden it.

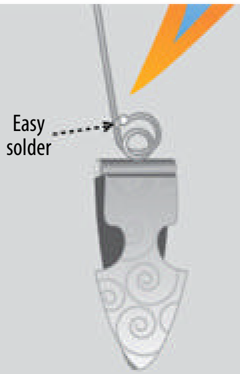
Use cross-locking tweezers to grasp the wire vertically about 1 in. (25.5 mm) above its end, and use your torch to ball up the end of the wire. Pickle, rinse, and dry the wire.





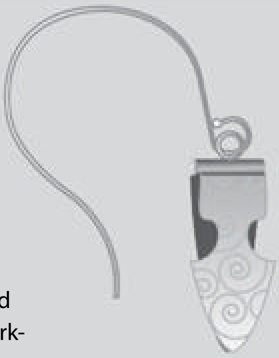
**13** Use half-round pliers to bend the balled-up end of the wire into a small loop.

**14** Open the loop, and thread it through the jump ring on the fold-over assembly. Close the loop until the balled-up end touches the straight part of the wire. Use easy solder to solder the loop closed.



**15** Form the straight part of the wire around a wooden dowel held perpendicular to the loop.

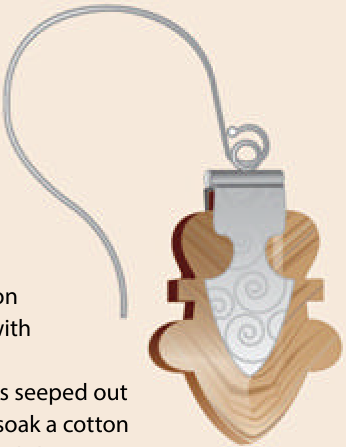
**NOTE:** This loop can be as large or as small as you like. A smaller dowel will give you a smaller-diameter ear wire. I used a 3⁄8-in. (9.5 mm) dowel. The work-hardened wire will end up with a larger diameter than you expect.



Use half-round pliers to bend the end of the ear wire slightly outward. This bend will help the earring thread through the ear more comfortably. File the end of the ear wire until it's rounded, then sand and polish it until it's smooth. Patinate and finish the earring to your liking.

## ASSEMBLY

**16** Spread a little bit of superglue inside of the folded-over metal. Be careful not to overdo it — a small amount goes a long way!



Carefully position the stone in the metal. If the metal doesn't quite lie flat on the stone, weight it down with a small bench block.

If any of the adhesive has seeped out and is visible on the stone, soak a cotton manicure swab in the nail-polish remover, and gently rub the swab over the exposed adhesive. Don't flood the area — you don't want to dissolve the adhesive underneath the metal.

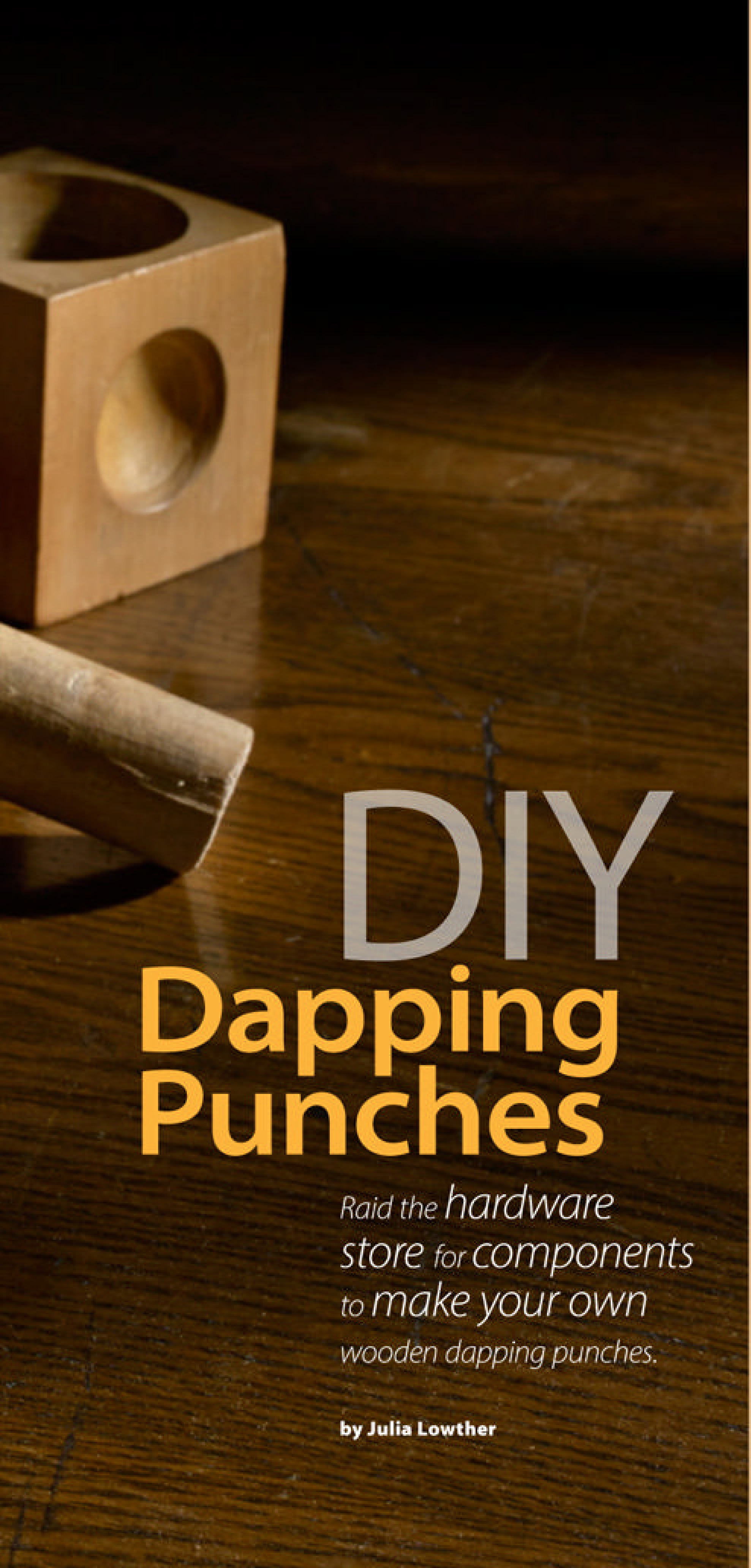
Illustrations by Marthe Roberts/Shea. Botswana agate and jade cabochons cut by John Chickadel.

*Marthe Roberts/Shea's work has been shown in galleries nationally and has appeared in* Art Jewelry*'s Gallery. She teaches jewelry making at the Cheltenham Center for the Arts (Cheltenham, Pa.) and the Main Line Art Center (Haverford, Pa.). She is also the president of the Pennsylvania Society of Goldsmiths. You can reach her via her website, www.jewelrybymars.com.*

**These earrings integrate sterling silver and fused 18k gold with a custom-cut jade stone. The hand-chiseled gold acts as a frame for the pierced triangular window, which allows the jade stone to peek through.**

Learn four ways to cut metal tubing at **www.artjewelrymag.com/reference**.

Subscribers: Discover four ways to flatten the end of a tube after you've cut it to length at **www.artjewelrymag.com/reference**.



SPECIAL
TOOLS &
STUDIO

# DIY Dapping Punches

Raid the hardware store for components to make your own wooden dapping punches.

**by Julia Lowther**

Wooden dapping punches are useful little things to have about the jewelry studio. They are gentle tools and won't mark your metal the way steel punches can. To the uninitiated, they may look a little tricky to create, but the truth is just the opposite. I love putting these together and being all, "Ta-da!" in about, oh, five minutes.

## materials

- Unfinished wooden cabinet knobs, variety of sizes and shapes
- Dowel screws, one per punch, size determined by wooden cabinet knobs
- Wooden dowels, 4 in. (10.2 cm), diameters determined by cabinet knobs

## tools & supplies

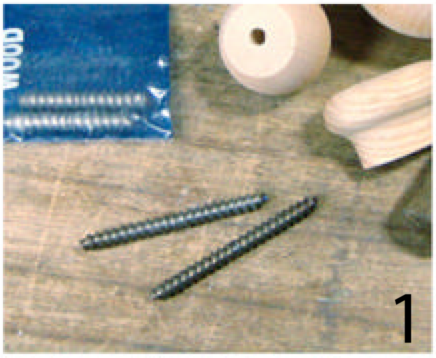
- Ruler
- Fine-tip permanent marker
- Hacksaw or jeweler's saw with #4 blade
- Coarse sandpaper (optional)
- Compass or dividers
- Bench vise
- Center punch
- Drill bits, size determined by wooden cabinet knobs
- Hand drill, flex shaft, or rotary tool
- Scrap wire
- Masking or painters tape (optional)

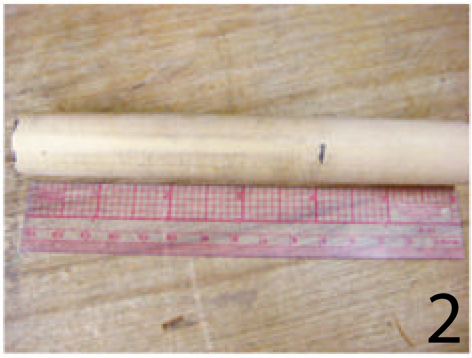
Find out where to buy supplies, *page 79*
See Safety Basics, *page 75*

**VIDEO & BASIC**

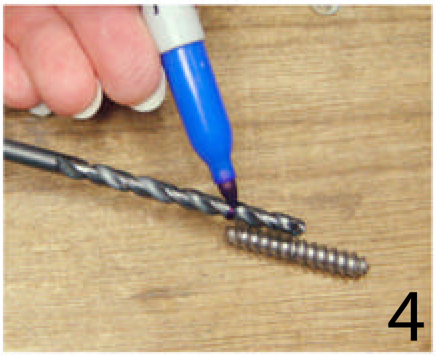
| Learn a fundamental technique in this bonus tutorial: | B | 🎥 |
|---|---|---|
| Using a dapping block | ● | ● |

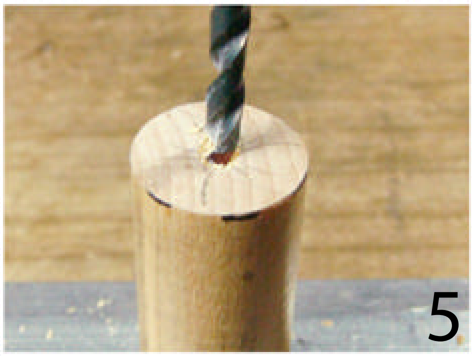
B **Basics, *page 73***
🎥 **Videos, www.artjewelrymag.com/videos**

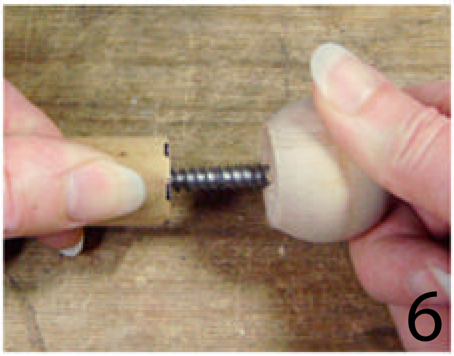

1

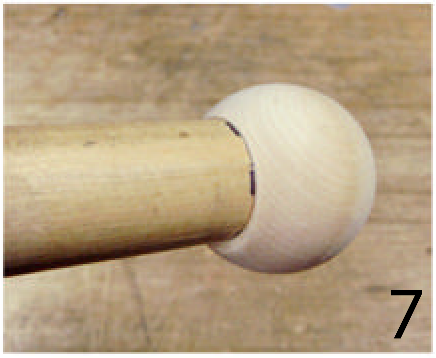

2

3


4


5


6


7

Process photos by Julia Lowther.

**Choose your cabinet knob.** Look around the hardware store for unfinished wooden cabinet knobs in various sizes and shapes; they generally come in packs of two. They also usually come pre-drilled and are accompanied by screws — although you won't be using those screws for this project. The largest knob I use is about 2 in. (51 mm) in diameter, and the smallest is an oval about 1 in. (25.5 mm) wide on its narrow axis.

**Choose the dowel screws.** Double-pointed dowel screws are what make this project work **[1]**. They come in different sizes, so use the regular screws that come with the knobs as a guide to determine what diameter dowel screws you'll need. You'll need one screw for each knob.

**Cut the dowel.** The exact diameter of the wooden dapping-punch shank isn't important, as long as it is large enough to cover most of the base end (the side of the knob that would be in contact with the cabinet) of the wooden knob. I chose a section of an old broom handle, about 1 in. (25.5 mm) in diameter, for the largest knob. Use a fine-tip permanent marker to mark a length of about 4 in. (10.2 cm) on your dowel **[2]**.

**TIP:** To help make a straight cut across a dowel, measure and mark a ring of guidelines around the dowel. While you cut, keep your saw on the guidelines and it will stay perpendicular to the dowel.

Use a hacksaw to cut your dowel **[3]**. If you don't have a hacksaw on hand, you can use a jeweler's saw. Just be sure to use a big blade, like a #4, or you'll be cutting all day. Try to keep the saw perpendicular to the dowel, so that the cut end will be as flat as possible. If the dowel can stand on the cut end, that's a good sign that the end is level. If it can't, use a bit of coarse sandpaper to sand the ends level.

Subscribers, learn how to perfect your dapping technique with the online article, "Practice Dapping Exercise: Dome Metal Sheet" at **www.artjewelrymag.com/reference**.

Try different shapes of wooden cabinet knobs to make your punches.

**Drill the dowel.** Place the dowel vertically in a vise or hold it firmly in one hand, and use a compass or dividers to find the center of one end. (See "Find the Center of a Dowel," *right*).

Use a center punch to make a divot at the center of the dowel where you will drill your hole.

Select a drill bit that fits loosely into the hole on the wooden knob. This is the size of hole you need to drill in your dowel.

Place a bit of scrap wire into the hole of the wooden knob, and use the permanent marker or a bit of masking or painters tape to mark the depth of the hole on the wire. Measure from the end of the wire to the mark. Subtract the depth of the hole from the length of the dowel screw to determine how deep you'll need to drill into the dowel. For example, if your dowel screw is 1½ in. (38 mm) long and the depth of the hole in the knob is ½ in. (13 mm), then the hole in the dowel needs to be 1 in. (25.5 mm) deep.

Use the permanent marker or a bit of masking or painters tape to mark the depth on your drill bit **[4]**.

Secure the dowel vertically in the vise and use your selected bit in a hand drill, flex shaft, or other rotary tool to drill a hole to the proper depth in the dowel. I use a hand drill so I can keep an eye on the mark on the bit. Be sure to drill straight down the center of the dowel **[5]**.

**Assemble the punch.** This is the moment you've been waiting for! Push the tips of the dowel screw into the holes of both the dowel and the knob, and twist the two pieces in opposite directions at the same time **[6]**. Because of the way the dowel screw is threaded, it will draw the wooden pieces together to cover the screw **[7]**. It feels a little like magic. Once you've seen how easy it is to make a punch, you can make lots more, in many different sizes.

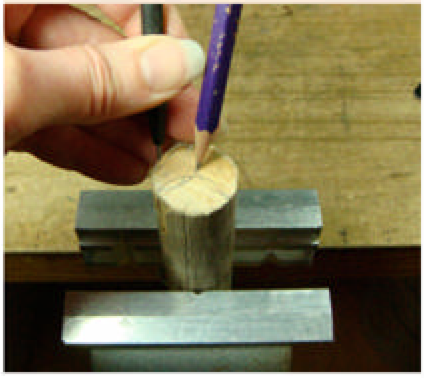
Now all you need is a hammer and some metal to form. There are all sorts of options for what to press the metal into. You can use a metal or wood dapping block, work on a sandbag, create a depression in thermoplastic, or come up with your own material/depression into which you can form the metal. AJ

## find the center of a dowel

Rest one tip of a compass (or dividers) against the side of a dowel near the flat end. Open the compass/dividers to approximately half the diameter of the dowel. With one leg of the compass resting on the edge of the dowel, draw (or scribe, if you are using dividers) an arc across the end of the dowel.

Move the compass to at least two more spots around the circumference of the dowel, and draw a new arc each time.

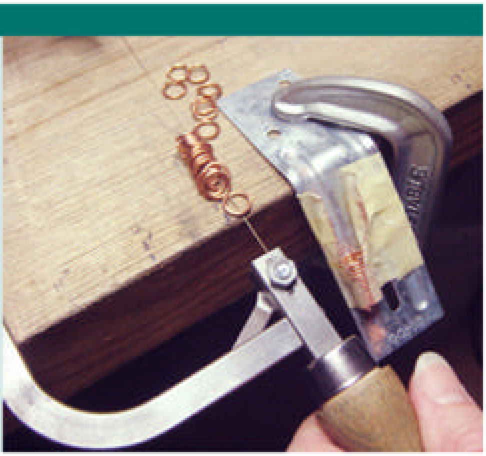
If the compass is set to exactly the radius of the dowel, the arcs will intersect at the center of the end of the dowel. It's more likely that the arcs will create an open space at the center of the dowel. The center of this space is the centerpoint of the dowel.



### ASK THE ARTIST: JULIA LOWTHER

### What is your favorite unexpectedly useful tool?

"My favorite is one of my own invention. I love it because it allows students who have never held a jeweler's saw before to be almost instantly successful when cutting a coil of wire into jump rings — a notoriously frustrating task. My "Coil Brace" (*right*) begins life as a lowly truss clip (later slightly altered) from the hardware store."
Contact: www.shoeboxstudio.com

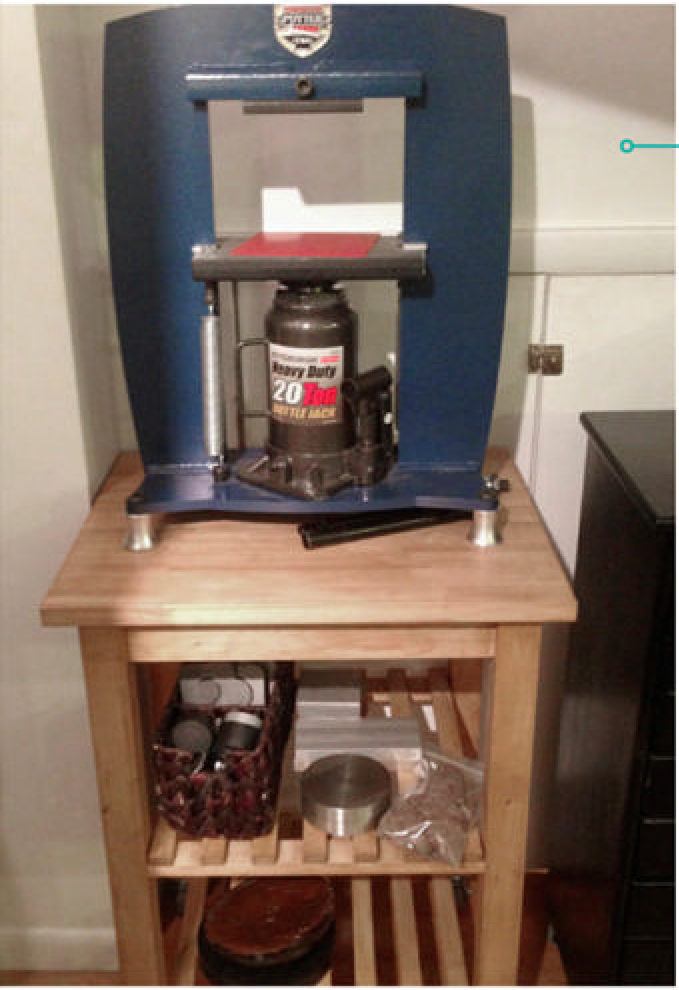


ORGANIZATION 101

# Studio Storage Solutions

*Tired of one-size-fits-all options?* Art Jewelry *readers share their innovative solutions to organizing tools and materials.*

Small studios can be efficient and productive, but when clutter is left unchecked, it can quickly overwhelm the available space. Sure, you might be able to scale down your tools, keeping only the essentials. But perhaps a better solution is to rethink your storage options. We asked our readers for input; here are some of their clever ideas you may be able to incorporate into your own studio.



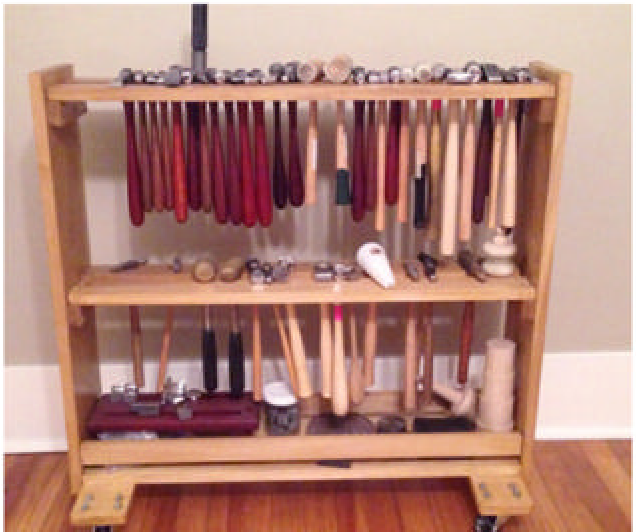
### CRISTINA LEONARD, IOWA CITY, IOWA

**Studio:** Approx. 300 sq. ft. (27 sq. m).
**Medium:** Metal (sterling silver and bronze)
**Contact:** www.cristinaleonard.com

My studio is fairly small, and I've struggled over the years with efficient storage. Lately, I've gotten a bit more serious about it.

I repurposed an IKEA kitchen chef's cart into a solid, movable worktable for my hydraulic press (*left*). I cut the legs down to the height I needed and added heavy-duty locking casters to support the weight of the press. Plus, I bolted the press down to the tabletop for safety.

I have a lot of hammers, but never found a commercial storage solution that worked for me. So, I decided to build one to suit my exact needs (*below*). It has slotted shelves for hammers, holes for mandrels and stakes, and a shelf on the bottom for other frequently used tools. It also has heavy-duty locking casters so I can move it around. It's especially satisfying because I designed and built it myself.

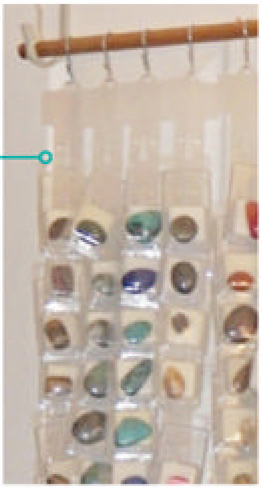


### GINGER NEWBORN, YPSILANTI, MICH.

**Studio:** 10 x 10 ft. (roughly 3 x 3 m)
**Media:** Macramé and wire
**Contact:** www.newborndesigns.net

In a small room, every space is useable, even the space on the door.

Local stores throw away plastic hook holders, and the store where I work doesn't keep the plastic containers that crystals come in. I already had the door hooks and a wooden dowel. Now I store my cabochons in the pastic containers and hang them on the hook holders hung from the dowel on my door.

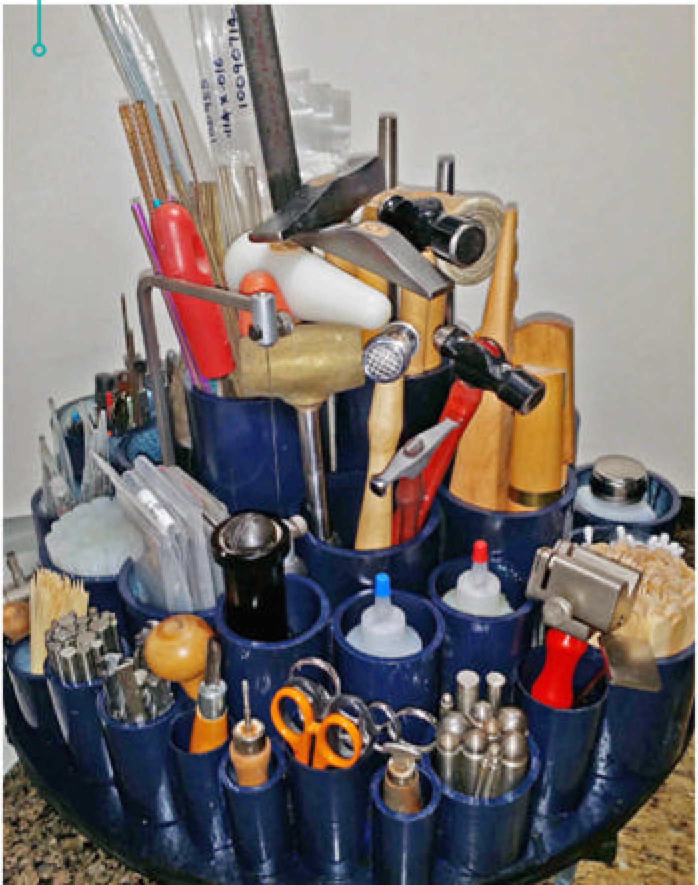


### SHERRY MOSER, CLEVELAND, GA.

**Studio:** Approx. 500 sq. ft. (45 sq. m)
**Media:** Glass and metal
**Contact:** www.sherrymoser.com

My studio is compartmentalized into specific areas including a sandblasting booth area, lampworking torch area, soldering area, and jewelry-construction area, plus an office and photography area.

In my jewelry-construction area is a large lazy Susan that holds a homemade tool organizer. My husband cut different-size PVC pipes and assembled them with heavy-duty double-sided tape. The different heights provide storage for small items like toothpicks, as well as for larger items like hammers.

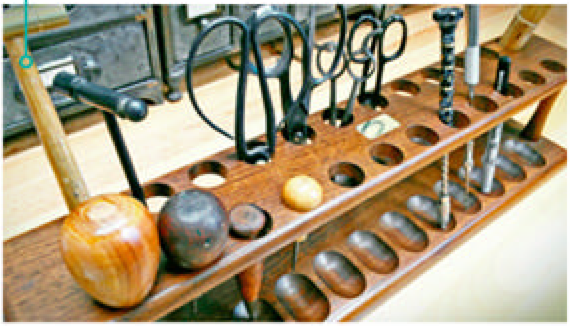


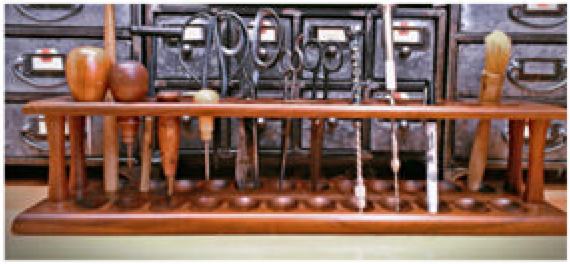
### DERYN MENTOCK, CYPRESS, TEXAS

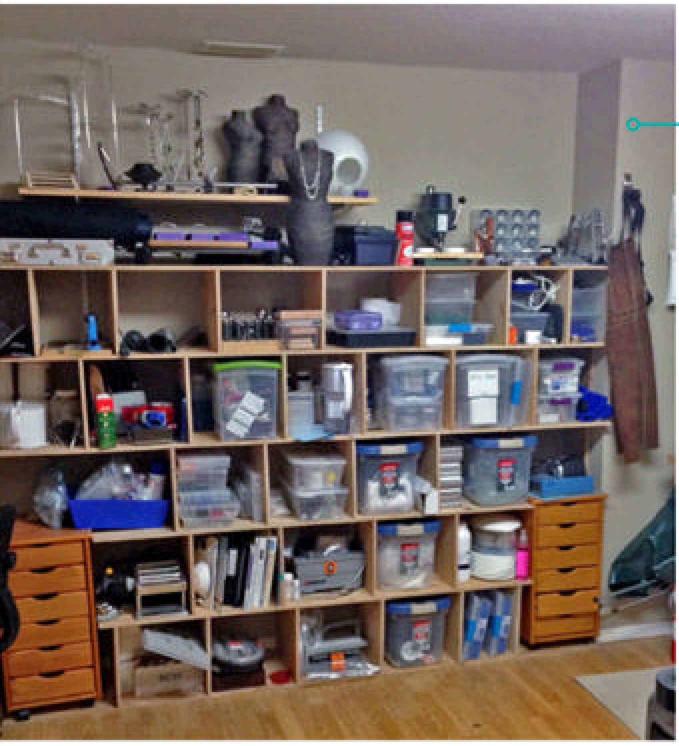
**Studio:** 10 x 12 ft. (3 x 3.7 m)
**Media:** Metal and wire
**Contact:** www.derynmentock.net

I use wooden pipe racks for storing tools. It keeps my files, scissors, awls, screwdrivers, etc. separated.

I use a worm binder (yes, a worm binder!) for storing my wire (*bottom*). It's a three-ring binder from the local sporting-goods store, and its original purpose was for storing fake bait worms used for fishing. It contains heavy zip-top bags that attach to the rings, so they're removable if you want to travel with them. I mark the wire gauge on the outside of the bag with a permanent marker.







### SONJA R., B.C

**Studio:** 12 x 13 ft. (3.7 x 4.0 m)
**Media:** Electro-etching, enameling

When I first started making jewelry, my studio was big enough. But my interests quickly expanded into vitreous enameling, acid- and electro-etching, roller printing, casting, lapidary, granulation, electroplating, keum boo, forging and forming, resin, filigree, etc. Within a few years, I had grown out of my studio. With nowhere else to go, I needed some pretty serious organization tactics to combat the growing tools, supplies, and materials.

First, I separated all the various technique supplies into different storage containers, then I started planning my cubby storage solution based on the number and size of totes.

I built the unit from plywood and joined it together with biscuit joinery. I'm no carpenter, but it was easy to make. I left enough room to fit two small chests of drawers that I'd been using; this kept them useful but out of the way.

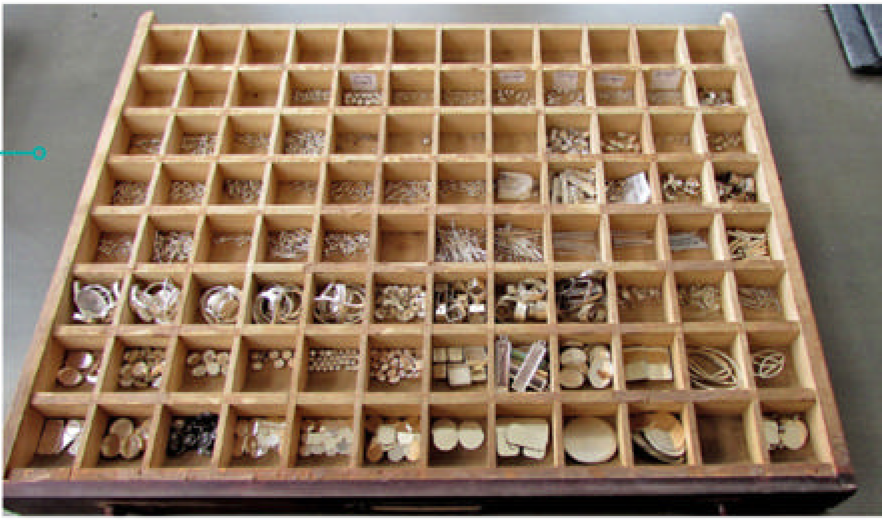
Now when I'm working on a project, all I have to do is pull out the tote with the corresponding label, and all my supplies are at hand without me having to search for anything. When I'm done, everything goes back in the tote and the tote goes back in the cubby storage unit. It's been a wonderful space, time, and sanity saver!

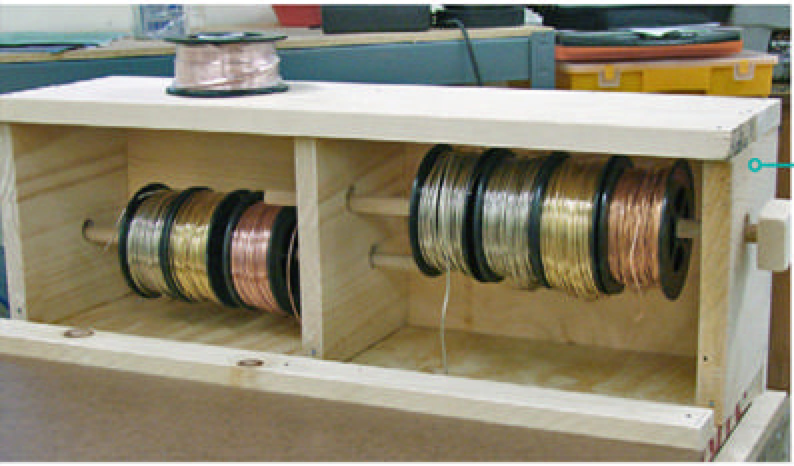
### LISA YORK, CHICAGO, ILL.

**Studio:** Approx. 10 x 10 ft. (3 x 3 m)
**Medium:** Metal
**Contact:** www.fugudesigns.etsy.com

I recently purchased a vintage three-drawer watchmaker's cabinet on eBay. Best purchase ever! This is my new sterling silver drawer. I am so happy to have all my itty-bitty parts in one easy-to-find space.

As an added bonus, most of the similar cabinets I saw on eBay also came with tons of watch parts (many in little corked glass vials). Mine came with 300+ glass watch faces, which means more found objects to incorporate into projects!





### WENDY EDSALL-KERWIN, ELIZABETHTOWN, PA.

**Studio:** 16 x 20 ft. (4.9 x 6.7 m)
**Media:** Metal and wire
**Contact:** www.hammerstrokeandfire.com

My studio (including booth storage and household-tool area) is a two-car garage. I primarily work in metal (sheet & wire). To help keep my spools of wire close at hand, I made a holder with removable dowel rods.

Do you have a studio storage solution you'd like to share? Send your image to **editor@artjewelrymag.com**. Please include your name, the size of your studio, your primary medium, and a short description of your storage idea.

## JANET BORELLI, LAKEWOOD, OH.

**Studio:** Mobile
**Media:** Wire, metal, metal clay

My studio moves from room to room along with me! Usually it consists of only a table or large footstool, a tray, and my hand tools.

I wash and reuse plastic tubs that originally contained deli meat from the grocery store. They are a manageable size, stackable, they show contents at a glance, and I'm being environmentally friendly by reusing them. As long as I like deli meat, I'll have a constant supply of containers!

## NATALIA COLMAN, HUDDERSFIELD, WEST YORKSHIRE, U.K.

**Studio:** 10 x 10 ft. (roughly 3 x 3 m)
**Media:** Metal clay, leather, mixed media
**Contact:** info@silverclaycreations.co.uk

I work from home in a converted garage. A large part of finishing my designs is to incorporate beads and findings. The thing that frustrated me most was having to open cupboards and go through boxes to get my hands on jump rings, ear wires, clasps, crimps, etc. So, I bought a decorative chandelier designed to hold tea-light candles. The glass candle holders are perfect for storing findings (*above*). I can see exactly what I want and get hold of it quickly.

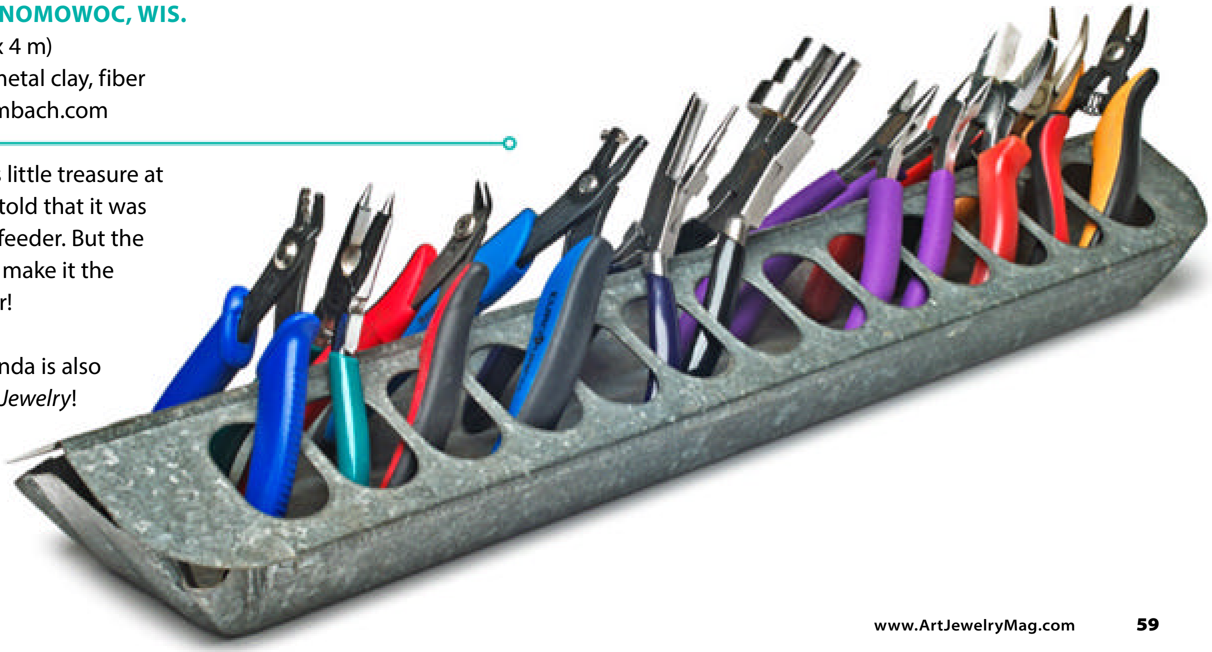
I also use a wooden letter stand as a holder for my pliers (*above left*). It has a little drawer where I keep essentials such as pens and pencils. It's much better than a simple pliers stand because it can hold other metal tools.

## LINDA KAST, OCONOMOWOC, WIS.

**Studio:** 9 x 12 ft (3 x 4 m)
**Media:** Wirework, metal clay, fiber
**Contact:** lkast@kalmbach.com

I recently found this little treasure at a flea market. I was told that it was an antique chicken feeder. But the design and spacing make it the perfect pliers holder!

**EDITOR'S NOTE:** Linda is also the Publisher of *Art Jewelry*!



**DIY**
***IT'S SIMPLE!***

# Kiln Care:
# HOW to REPLACE a HEATING ELEMENT

*If your kiln's gone cold, don't panic! You can get it back to working order without costly repairs.*

**by Charity Hall**

## tools & supplies

- New heating element(s) and element connectors specific to your kiln model
- Adjustable wrench
- Screwdriver
- Vacuum with hose attachment
- Kiln wash, metal spatula, and paintbrush (optional)
- Gloves
- Vise grips or pliers
- Bolt cutters

Find out where to buy supplies, *page 79*
See Safety Basics, *page 75*

**VIDEO**

| **Learn fundamental techniques in this bonus tutorial:** | B | 🎥 |
|---|---|---|
| A tour of firebrick and ceramic-fiber kilns | | ● |

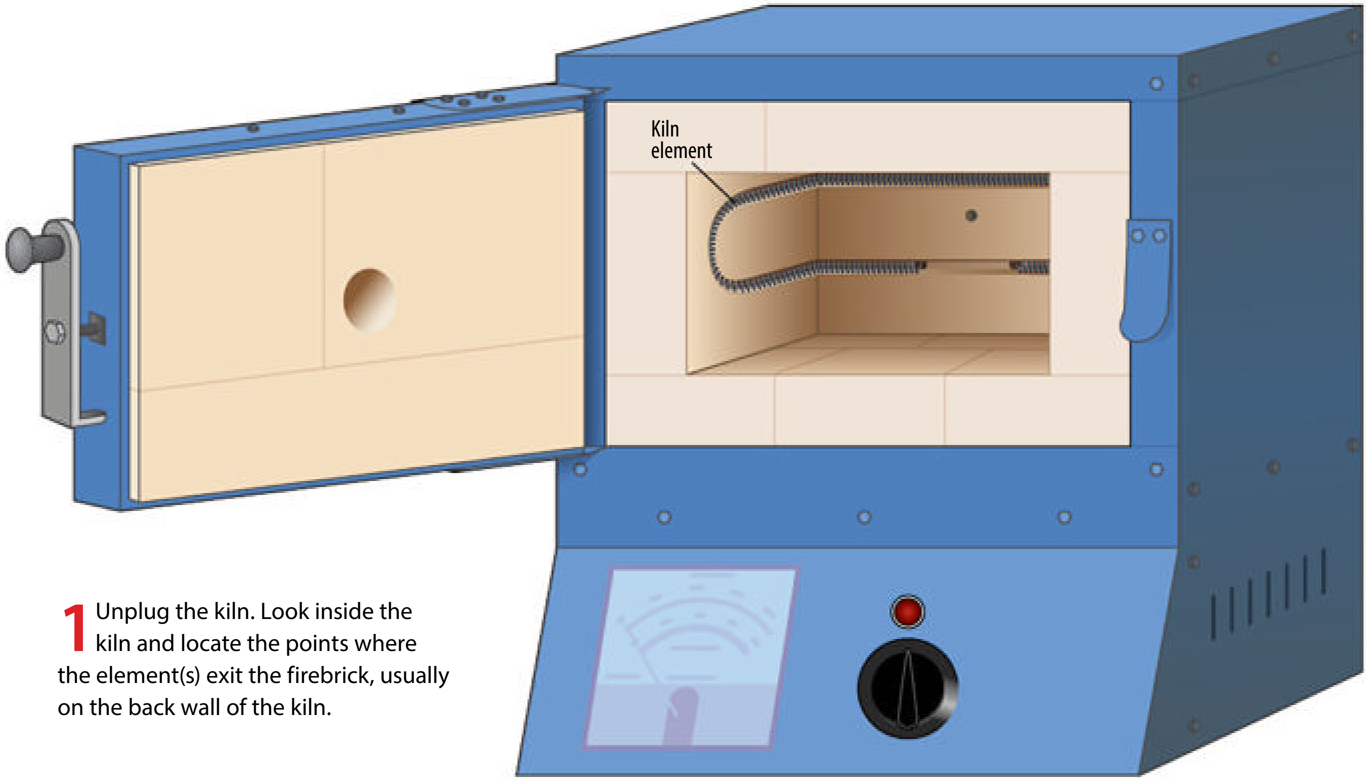
B **Basics, *page 73***
🎥 **Videos, www.artjewelrymag.com/videos**

The leading cause of a kiln failing to heat properly (or at all) is a broken kiln element (the coiled wire that heats the chamber inside the kiln). While an element will last for many firings, it does have a finite life. Eventually, it will break and need to be replaced. This tutorial shows you how to replace the element(s) in firebrick kilns that have visible elements that aren't permanently affixed to the firebrick — most jewelry kilns fall into this category. Replacing a kiln element is relatively simple, and you can save money by doing it yourself.

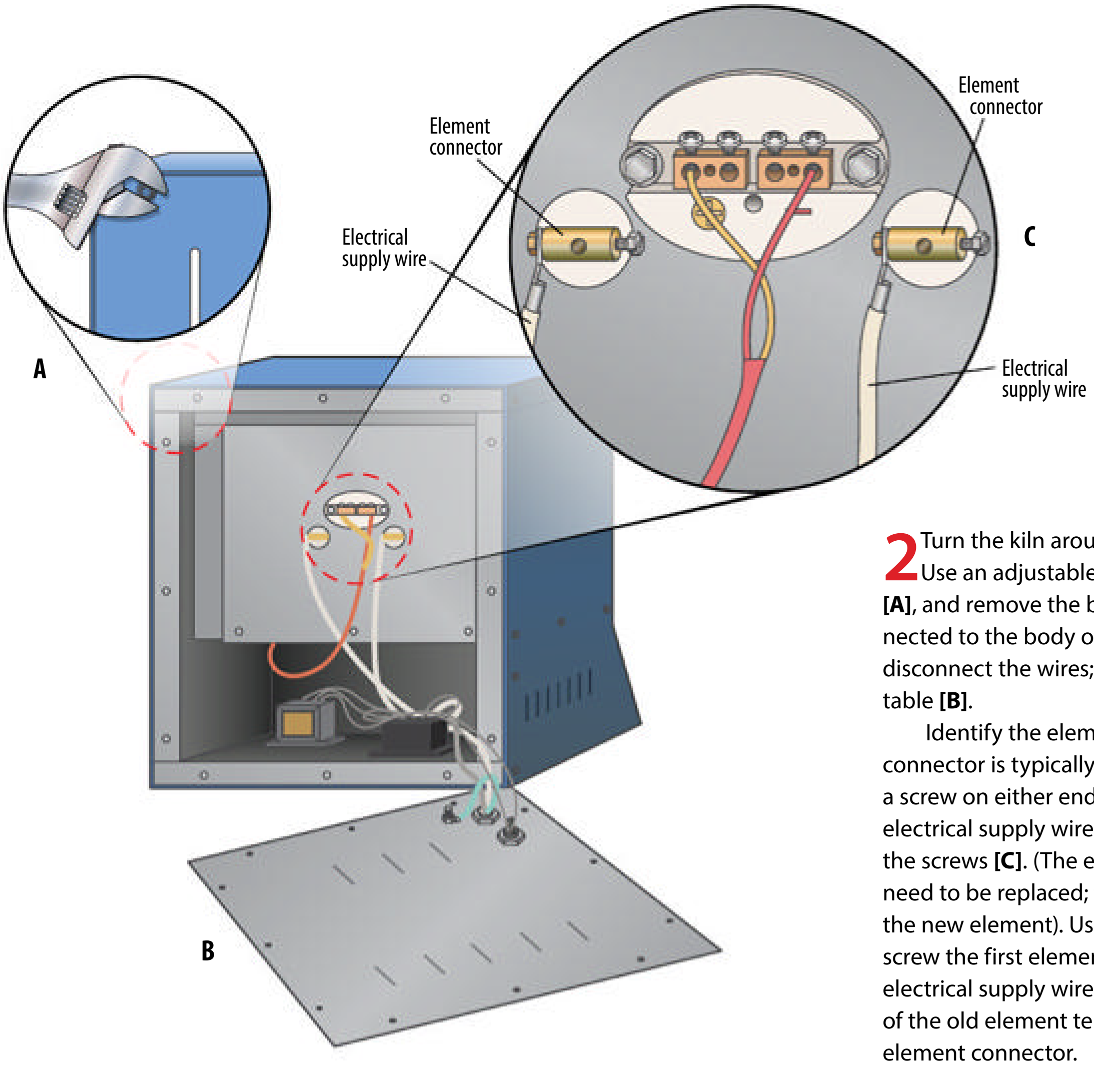
Before you start, determine the original brand and model of your kiln, and purchase replacement elements for it. You can find this information on a small label that is usually located on the back of the kiln.

**NOTE:** Sometimes retailers will rebrand kilns under their company name that were actually made by another company. This was the case with my kiln, which I purchased as a Rio Grande Model 900. But, I recognized the kiln as a Paragon, and confirmed this by finding the model number E9AX on the original label. I ordered my replacement element directly through Paragon, but you could also contact the retailer from whom you purchased your kiln to buy the correct replacement elements. Either way, it is imperative to buy the exact element specified for your kiln make and model.

Art+ Subscribers: Want to find out how much your kiln costs per use? Check out our Kiln-cost Calculator at **www.artjewelrymag.com/calculators**.

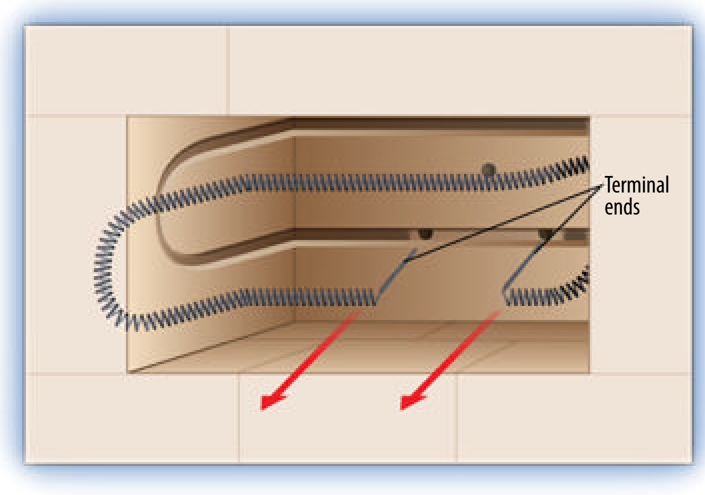


**1** Unplug the kiln. Look inside the kiln and locate the points where the element(s) exit the firebrick, usually on the back wall of the kiln.



**2** Turn the kiln around so the back faces you. Use an adjustable wrench to remove the bolts **[A]**, and remove the back panel. It will still be connected to the body of the kiln by wires. Don't disconnect the wires; just rest the panel on the table **[B]**.

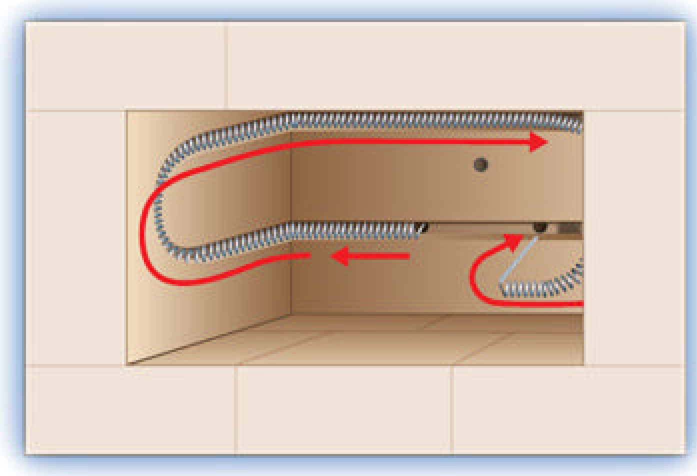
Identify the element connectors. An element connector is typically a barrel-shaped object with a screw on either end, a hole in the center, and an electrical supply wire (white) attached with one of the screws **[C]**. (The element connectors will also need to be replaced; they should be included with the new element). Use vise grips or pliers to unscrew the first element connector. Disconnect the electrical supply wire, and slip the connector off of the old element terminal. Repeat for the second element connector.



**3** Push the terminal ends of the element through the holes toward the kiln's interior. Working from the front of the kiln, gently pull the ends all the way into the kiln, and carefully remove the entire element from the kiln (*left*). Take care not to damage the carved grooves in which the element rests. Inspect the old element. Elements wear out quickly if the coil touches a foreign object (other than the firebrick) or if the element comes into contact with itself. You may be able to see where this has occurred.

**NOTE:** There will often be a slumped section in the coil, indicating damage, but some broken elements may not seem visibly damaged. In the weeks before the element stops working altogether, you may notice that the kiln is heating irregularly or taking longer than usual to heat.

Use a vacuum with a hose attachment to thoroughly clean the kiln. This is the best time to access all of the nooks and crannies of the interior. If desired, apply kiln wash to the floor of your kiln (see "While You're at It …" *below left*).



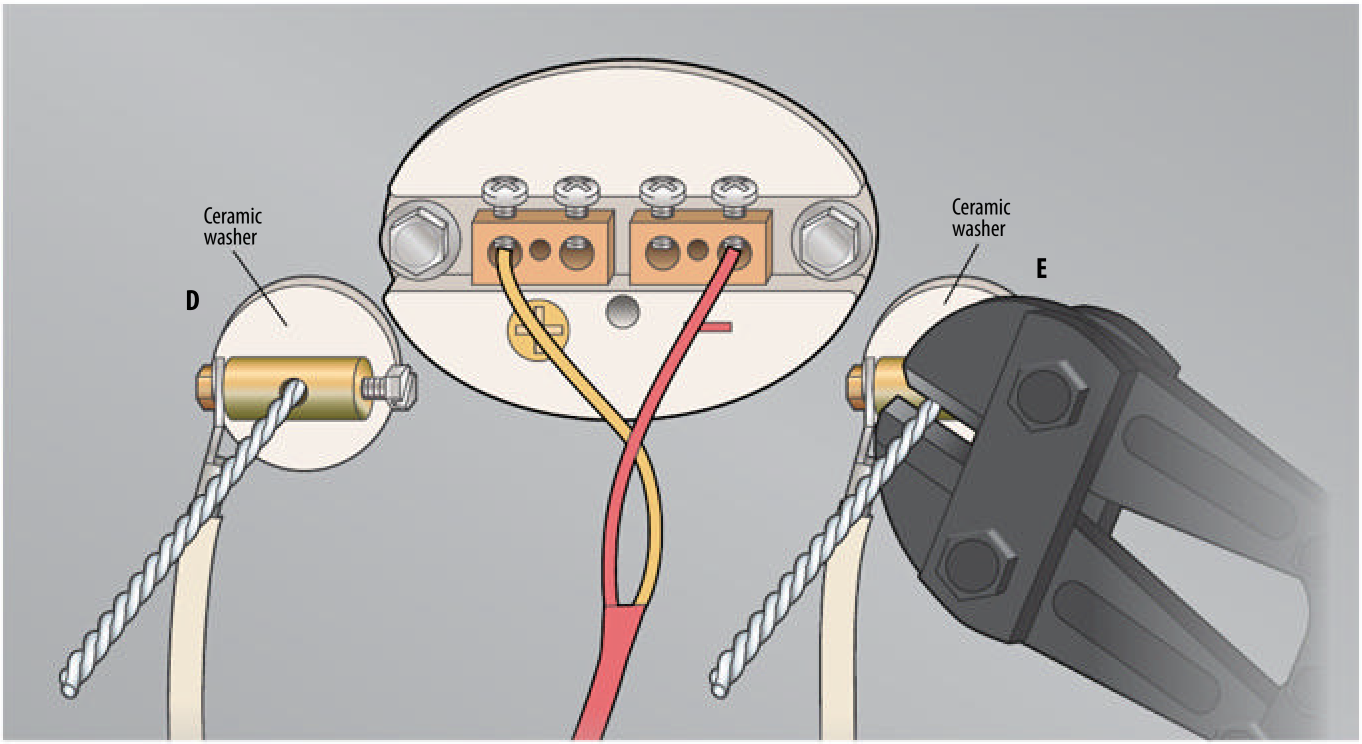
**4** Wear gloves to keep the new element clean, and insert one terminal end through a hole in the back wall from the inside. Working from that end of the element, gently place the element into the firebrick groove in the same configuration as the old element. Don't stretch or compress the new element. Make sure the coils don't touch, and minimize the dust coming into contact with the element. When you reach the other end, insert the terminal through the hole toward the back of the kiln (*above left*).

**NOTE:** When replacing an element in a kiln, ensure that the element is seated well within the grooves in the firebrick. Like all metal, the element will expand and contract slightly as it's heated, and you want to be sure it won't fall out of the corners. However, once the element is fired for the first time, it will become hardened and difficult to reposition, which is why it is important to get it seated properly while installing it.

## while you're at it …

When you replace your kiln's element, it's also a good time to apply new kiln wash to your kiln. Kiln wash is a layer of silica-based clay you apply to the floor of your kiln and some types of kiln shelves to keep glass (glaze, enamel, etc.) from sticking to and eating into the firebrick when the kiln is heated. Make sure to apply kiln wash and let it dry before installing the new element to avoid getting dust on it.

**1.** Use a flat metal spatula to gently scrape any enamel or other residue from the firebricks, being careful not to damage or gouge the brick.
**2.** Sweep out the kiln and vacuum it thoroughly, especially in the grooves where the new element will be installed.
**3.** Mix kiln wash with water to a thin, paintable consistency. Use a flat paintbrush to apply it directly onto the firebrick on the floor of the kiln.
**4.** Allow it to dry for 24 hours, and apply a second coat. Two to three layers of kiln wash is ideal (you can use the same batch you mixed earlier; just store it in an airtight container, and add water as needed).
**5.** Do not fire the kiln for at least 24 hours after applying the final coat.



**5** Still wearing your gloves, slide a new element connector over one terminal end until it comes into contact with the ceramic washer on the back of the kiln **[D]**. (The ceramic washer prevents the element from touching the interior metal kiln wall.) Hook one electrical supply line around the screw on one side of the connector, and then use vise grips or pliers to tighten both screws. Gently tug the electrical supply line to ensure it's snug and that the element is held in place. Repeat for the second terminal and connector.

Use bolt cutters to trim the terminal ends about ¼ in. (6.5 mm) from the connector **[E]**. Replace the back panel of the kiln, tighten all of the bolts, and vacuum the interior of the kiln again to remove any brick dust that may have become dislodged during installation of the new element.

Plug in the kiln and turn it on. If the kiln starts heating, you're done. If not, unplug the kiln and recheck all connections. AJ

**Although the author and publisher have made every effort to ensure that the information presented was correct at press time, the author and publisher do not assume and hereby disclaim any liability to any party for any loss, damage, or disruption caused by errors or omissions, whether such errors or omissions result from negligence, accident, or any other cause. No guarantees are made about the safety or function of this kiln-element replacement technique.**

## ASK THE ARTIST: CHARITY HALL

### What is your favorite unexpectedly useful tool?

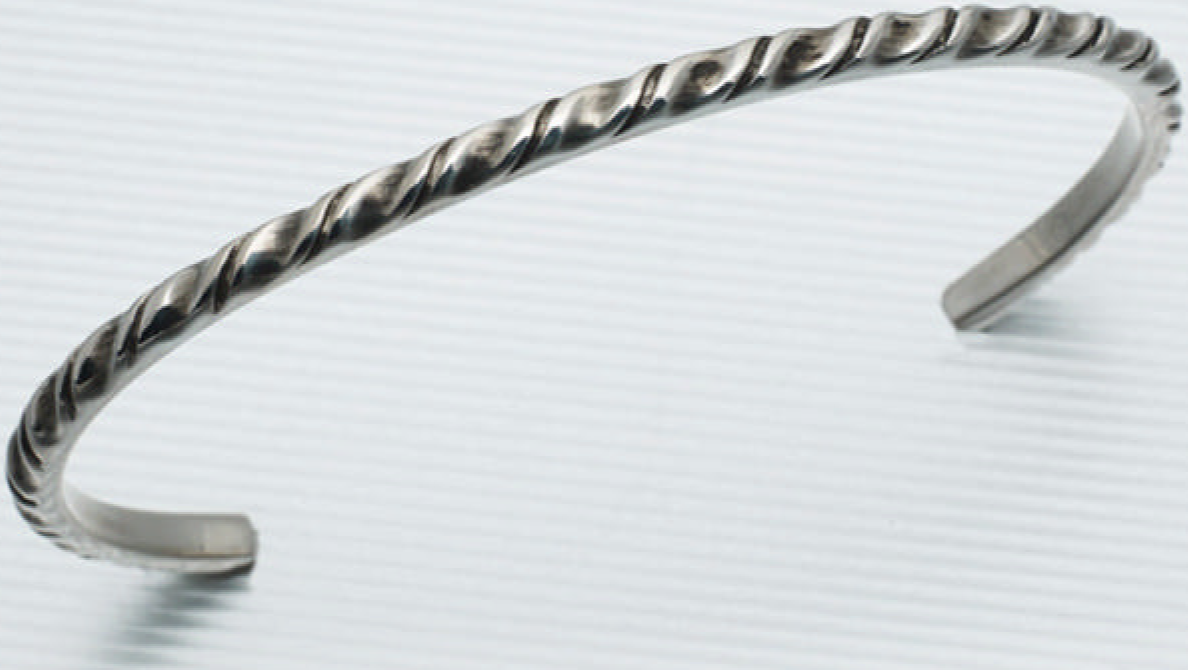
"I bought this loupe for Professor Tass Kelso's field botany class when I was 19 years old. Over the next few years, I used it daily as she mentored me and taught me how to identify the flora of Colorado while we hiked together in the lowland shale barrens, through foothill canyons and mountains, and high into the alpine tundra. Years passed, and today I mostly use this loupe to inspect stone settings, but it is the one tool which physically bridges my divergent paths in botany and metalsmithing, offering perspectives of fine detail universally important to both fields. Personally, this loupe symbolizes the constant presence of Tass, as it is her heroic example and unconditional support that has always given me the confidence to pursue my dreams."

Contact: www.charityhall.com

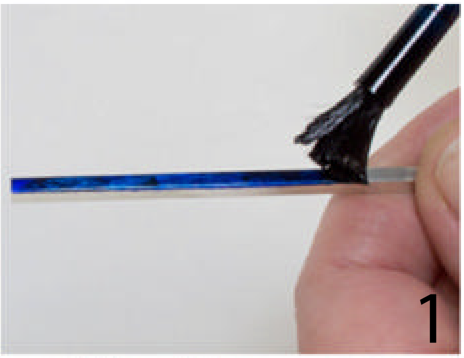
# Take a Decorative Approach to Sawing & Filing

*Use a traditional knife-making technique to add precise detail to your jewelry.*

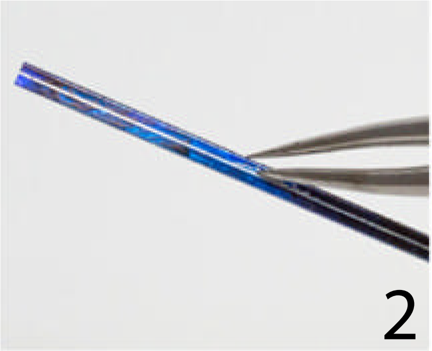
**by Dellana**



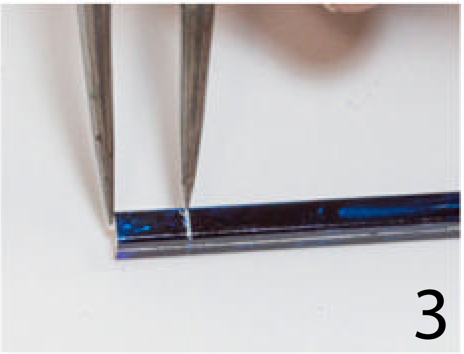
After working for 17 years as an art jeweler and goldsmith, I discovered a new (to me) and intriguing technique when I started making knives: filework. Filework is used extensively as an embellishment on fancy knives (see one of my knives on *page 69*), and has been in use since the early '70s. It helps raise a common tool (the knife) into the arena of art. There are many different and beautiful filework patterns in regular use in the knife world, and this pattern, called "Rolling Ribbon," was one of the first I learned as a new knifemaker. It's a fun technique that is a great addition to your jewelry-making skill repertoire — it can make a nice frame for a stone setting, a ring, hoop earrings, pendant, etc. The only limit is your imagination!



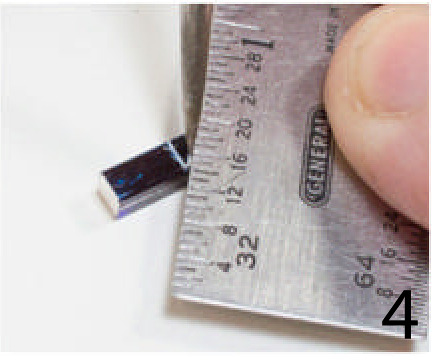
1



2



3



4

## materials

- Sterling silver wire: 8-gauge (3 mm), square, length determined by design

### toolboxes, page 75

- Sawing/Piercing
- Finishing

### additional tools & supplies

- Stamps: metal quality and trademark/ maker's mark
- Blue layout fluid or a permanent marker
- Scribe
- Straightedge or metal ruler
- Vise with masking tape, rubber, or brass covering the jaws
- Files:
  - Chainsaw file: ⅛ in. (3 mm)
  - Needle file: triangle
  - Hand file: flat, #0 or #1 cut
- Wooden or plastic forming tools, including a mallet

Find out where to buy supplies, *page 79*
See Safety Basics, *page 75*

**NOTE:** Before you begin, determine the length of the wire needed for your project. The length depends on the size and type of jewelry you want to make. My process photos demonstrate making a cuff bracelet, so I used a 6½-in. (16.5 cm) length of wire. Adjust the measurements to your required length.

**Mark the wire.** If you are going to mark your 8-gauge (3 mm) square, sterling silver wire with your trademark/maker's mark and a metal-quality mark (see "Marking Your Work," *page 68*), do so now. After you finish the filework, you won't be able to stamp the back without marring the front.

**Lay out the guidelines.** Apply a thin, solid coat of blue layout fluid or permanent marker to the top and sides of the sterling silver wire **[1]**.

Set dividers to half the thickness of the wire, and lightly scribe a line down the center of one side (You can also use a scribe and a straightedge or metal ruler) **[2]**. Repeat for the other side of the wire.

Set the wire top-side up on your work surface. Use dividers to scribe a vertical line across the width of the wire ¼ in. (6.5 mm) from one end of the wire **[3]**. Adjust the wire so this end points to the left.

If you're right-handed, use the scribe and straightedge or metal ruler to make a 45° line starting from the bottom of the previously scribed line on the top of the wire up and toward the right **[4]**.

If you're left-handed, scribe a 45° line starting from the top of the previously scribed line down and toward the right. This will make it easier for lefties to saw and file in the upcoming steps.

**Saw the first lines.** Secure the wire in a vise so that the straight and angled marks on the top of the wire extend from the jaws of the vise. Adjust your chair so that the end of the wire faces you.

**TIP:** Cover the jaws of your bench vise with masking tape, rubber, or brass to ensure the jaws won't mar your metal.

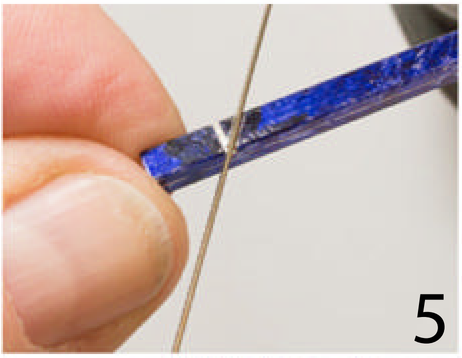
Support the free end of the wire with your nondominant hand, and use a jeweler's saw with a #4 blade to saw a vertical

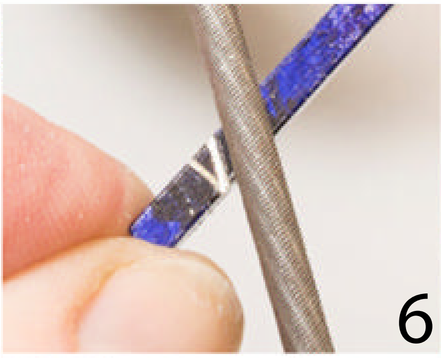
### BASICS & VIDEOS

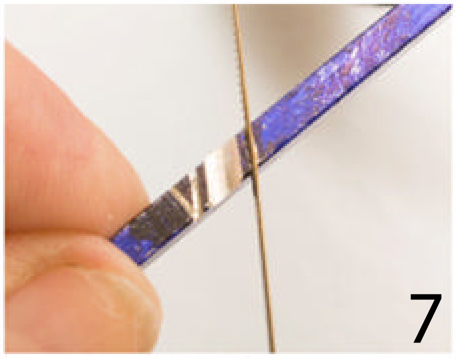
| Learn fundamental techniques in these bonus tutorials: | B | 🎥 |
|---|---|---|
| Threading a saw blade in a saw frame | | ● |
| Basic sawing of metal | ● | ● |
| How to file | | ● |
| Sanding | ● | |
| Polishing metal | ● | ● |
| Liver of sulfur patina | ● | ● |

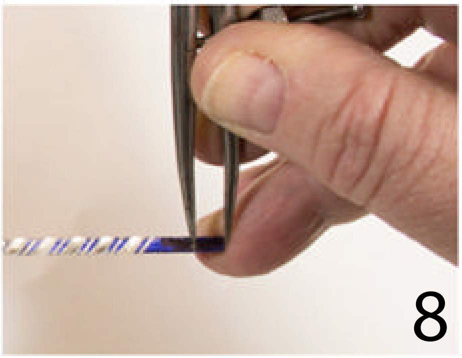
**B Basics, *page 73***
**🎥 Videos, www.artjewelrymag.com/videos**

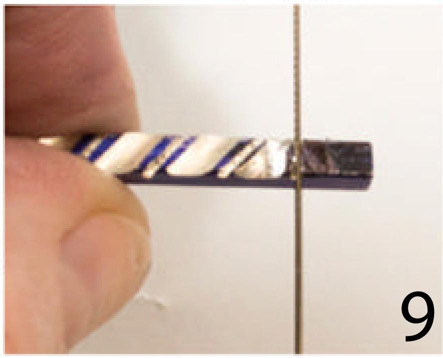
Subscribers: Download a free PDF of "Data Sheet: Filing," to learn all about files, their cuts, the most common shapes, and how to keep them in good shape. Visit **www.artjewelrymag.com/reference**.

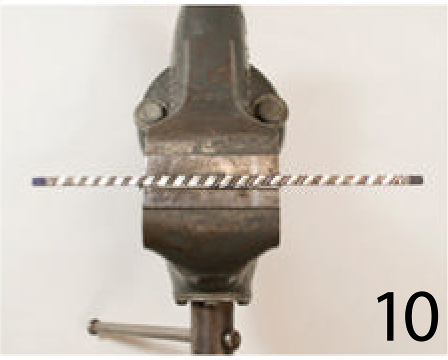

5


6


7


8


9


10

and angled line on the previously scribed lines **[5]**. Saw no deeper than the thickness of the saw blade. These cuts should end about halfway between the top of the wire and the marked guidelines on the sides.

**File the first ditch.** Use a ⅛-in. (3 mm) chainsaw file (see "Tool Spotlight: Chainsaw File," *opposite page*) to file across the top of the wire at a 45° angle, parallel to and about 1 mm from the angled sawn line, to create a ditch **[6]**.

**NOTE:** If your saw blade or file slips and removes any of the blued/marked color, use the marker to mark the flat areas on the top and sides of the wire right up to the sawn line or filed ditch. This will help you accurately see how far away to make the next line or ditch.

File until the depth is roughly equal to the depth of the sawn lines. This should be about halfway between the top of the wire and the lines scribed on the sides.

**Continue the pattern.** Use the jeweler's saw to saw a second 45° line parallel to and about 1 mm from the previous sawn line and the filed ditch **[7]**. This cut should be the same depth as the other sawn lines.

Repeat to make alternating filed ditches and sawn lines until you are about ½ in. (13 mm) from the opposite end of the wire. Adjust the wire in the vise as needed.

**Finish the pattern.** Use dividers to lightly scribe a line across the top of the wire ¼ in. (6.5 mm) from the end **[8]**.

**NOTE:** This mark is a guideline for where to finish sawing and filing to ensure this end of the wire matches the first end as closely as possible. Your last 45° sawn line or filed ditch should come as close as possible to the top of this line.

Continue the pattern until you reach the ¼-in. (6.5 mm) line. Saw a vertical line at the end of the last sawn or filed section **[9]**, and then saw a second vertical line 1 mm toward the end.

Repeat to saw a second vertical line on the opposite end of the wire **[10]**.

**Extend the ditches.** Starting at the left end of the wire (or right end, if you're left-handed), use the chainsaw file with a rocking, swooping motion to extend the first filed ditch so that it reaches the centerline on one side of the wire. Make sure the end swoops from the left and up toward the right (or, if you're left-handed, up from the right and toward the left). Repeat for the rest of the filed ditches on this side of the wire **[11]**.

Keep the top side of the wire facing up, turn the wire 180°, and repeat for the filed ditches on the second side of the wire.

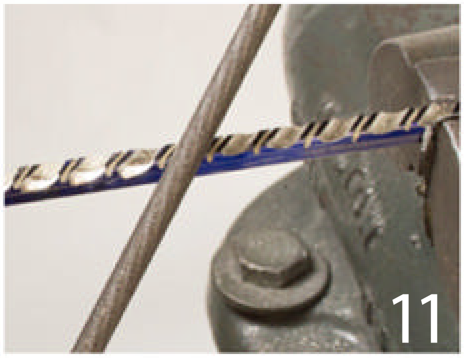
**Extend the sawn lines.** Again, working from the left, use a triangle needle file with a rocking, swooping motion to extend the first 45° sawn line down from the top of the wire to the guideline on one side. The line should go from the left, up and towards the right (or in reverse, if you're left-handed) **[12]**. Repeat for all the sawn lines on this side of the wire.

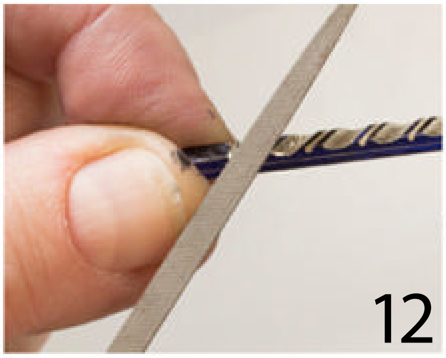
You want to form a sinuous S-shaped line from one side of the wire, over the top, and back down the other side of the wire. At this point, you should see the "Rolling Ribbon" pattern start to emerge.

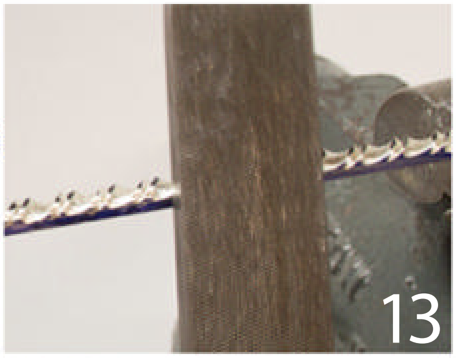
Turn the wire in the vise, and repeat for the sawn lines on the second side.

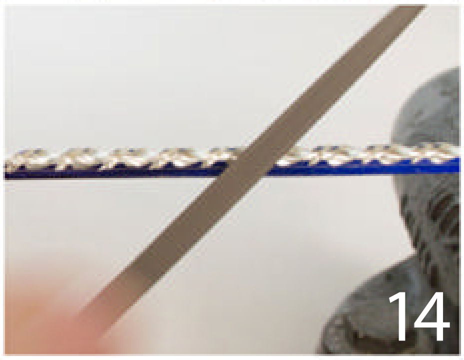
**Round the corners and refine the pattern.** Use a #0- or #1-cut flat hand file with a rocking motion to gently round the corners between the top and one side of the wire **[13]**.

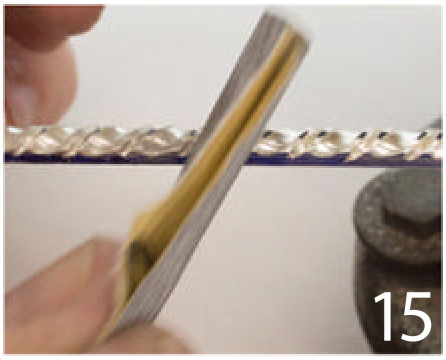
Free for a limited time! Through July 23, 2015, download a PDF of "File it Away," (January 2007) by Karen Lauseng, to continue pushing your filing skills. **www.artjewelrymag.com/projects**

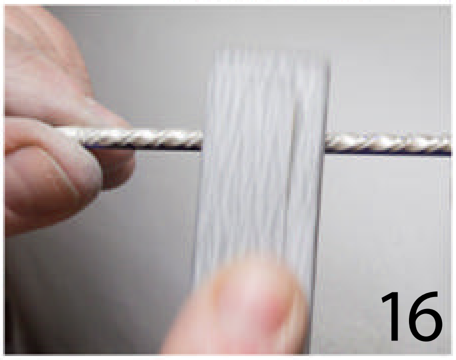

11


12


13


14


15


16

Process photos by Dellana.

**NOTE:** I prefer a ¾-in. (19 mm) file, but a narrower or wider file will also work.

Turn the wire around, and repeat for the other side. Keep the arcs on both sides even, and round out the top a bit at the same time. Be careful not to take off too much metal, or you will remove your sawn lines and filed ditches. As you work, make slight revisions to ensure the sawn lines and filed ditches are all the same depth.

Use the needle file to refine the sawn lines further **[14]**. With the edges rounded, the pattern should be clearly visible.

**Sand the wire.** Wrap a piece of 150-grit sandpaper once around the chainsaw file or the handle of a needle file. Sand the ditches so that no file marks are left on one side of the wire and half of the top **[15]**. Sand each of the ditches on this side of the wire, then turn the wire in the vise, and sand the opposite side.

Wrap 150-grit sandpaper around the flat file, and sand the top curved edges until no file marks are left **[16]**. A rolling motion from one side to the other works well for this, particularly for the coarser-grit sandpaper.

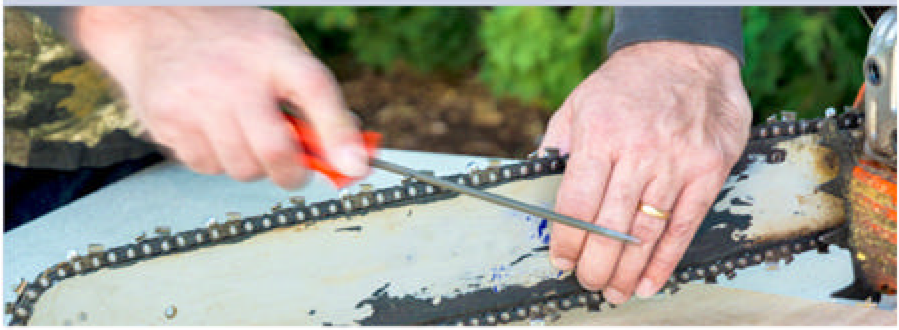
Repeat to sand the wire through 220-, 400-, 800-, and 1000-grits, including the ends and bottom of the wire.

### tool spotlight:
## chainsaw file

Chainsaw files are long, parallel, round hand files that are used for, as their name suggests, sharpening chainsaw blades. But, they are also a great tool to keep on hand in your metals studio. They don't come in a wide variety of sizes or cuts, but when you need a rounded groove with truly parallel sides, they're your best bet. You can find them at local hardware stores, and they're fairly inexpensive.

When used for sharpening chainsaw blades, the size of the file is determined by the pitch of the chainsaw blade, which is why the available sizes are limited. The most common sizes are ⅛, 5⁄32, 3⁄16, 7⁄32, and ¼ in. (3, 4, 5, 5.5, and 6.5 mm). The cuts of the files are also different than what you are used to. The coarseness of chainsaw files are graded in American Pattern cuts (bastard, second cut, smooth, etc.), whereas jeweler's files are graded in Swiss Pattern cuts (#00, 0, 2, etc.). You'll most likely find chainsaw files in bastard (coarse) or smooth (fine) cuts, but the availability depends on the supplier. For jewelry-scale work, the smaller-diameter and finer files tend to be the most useful.

**NOTE:** An alternative to a chainsaw file is a parallel round file from your favorite jewelry supplier. These come in a variety of sizes, often with Swiss Pattern cuts. They do tend to be more costly than chainsaw files, however.



©istock.com/knowlesgallery

**Polish the wire.** Use a hard felt wheel on a flex shaft or buffing wheel with white diamond polishing compound to polish the wire. Clean the wire to remove residual compound, then use a tightly sewn muslin buffing wheel with red rouge to bring the wire to a high shine. Leave the filed and sawn areas unpolished to create contrast.

**NOTE:** You can also darken these sections with liver of sulfur after you form the wire.

**Form the wire.** Use wooden, plastic, or other non-marring forming tools to form the wire into whatever shape you desire. I used a rawhide mallet and an oval wooden bracelet mandrel to form mine into a cuff bracelet **[17]**.

## editor's note:
# marking your work

Trademarks and metal-quality marks on jewelry help the consumer identify both the precious metals used in the piece and the craftsperson who made the jewelry. The marks are used for identification, as well as to establish provenance for collectors and museums. While you may be tempted to use your logo and a quality stamp, don't go stamping your jewelry without knowing the law. (The following is for the U.S.; research your country's hallmarking/assay laws.)

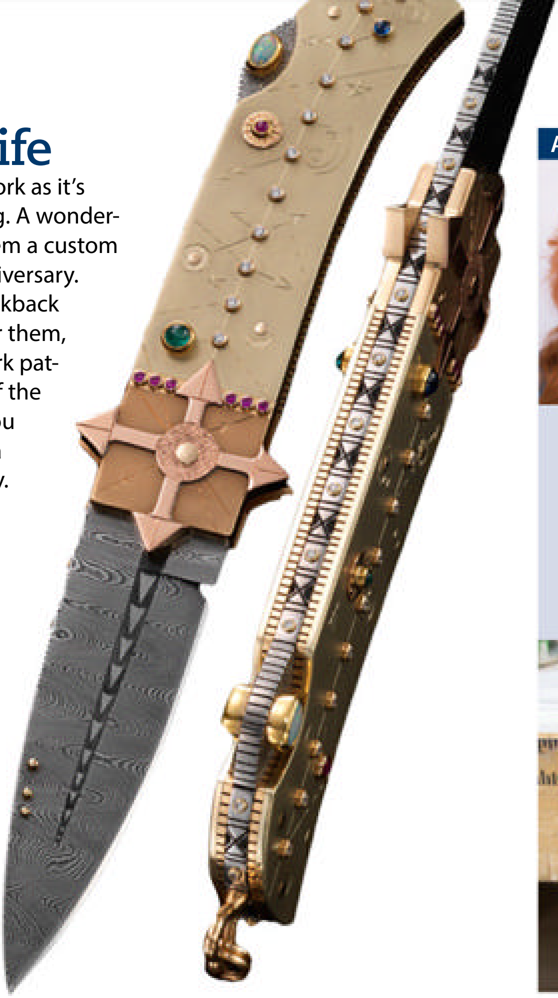
For example: Did you know you that you're not required by law to mark your piece, but if you do, you legally cannot stamp the metal quality on your jewelry without also stamping a federally registered trademark/maker's mark in close proximity to the quality stamp? Or, that your trademark needs to be registered or you can't legally use it? So, how can you find out if the design you want for your trademark is already in use, and how can you register your mark? Your first stop for everything trademark related should be the U.S. Patent and Trademark Office website, www.uspto.gov.

There's obviously more information than can be included here, but for a brief introduction to trademarks and quality marks, see Marlene Richey's "What You Need to Know About Trademarks and Quality Marks" (July 2011 issue). Get the issue at www.artjewelrymag.com/issues. —*AP*

NEW
ImpressArt®
ERGOANGLE
Metal Stamping Hammer
Patent Pending
www.ImpressArt.com

## fileworked knife

This knife is an example of filework as it's traditionally used in knifemaking. A wonderful couple asked me to make them a custom knife to celebrate their 10th anniversary. I created this 7⅛-in. (18.1 cm) lockback folding knife titled *LOVE Knife* for them, and designed and used a filework pattern on the outside and inside of the knife called "Hugs & Kisses." If you study it carefully, you can learn a lot about them and their journey.



**(Carbon) composite Damascus steel blade, 14k green-, rose-, and yellow-gold handles with 18k and 22k yellow gold, natural diamonds, rubies, emeralds, sapphires, and Australian opals; Forged, fused, fabricated, engraved, textured, inlaid, and fileworked. All work (including forging of Damascus steel) by Dellana.** Knife photos by PointSeven Studios.

### ASK THE ARTIST: DELLANA

### What is your favorite unexpectedly useful tool?

"My favorite tool is the scribe I inherited from my mentor, Jim Schmidt. He made it from a small crown antler and an old round needle file. He embellished it with antique brass parts he found. A scribe is one of the most useful and necessary tools in the shop, particularly one that was made personal and magical by its maker."
Contact: www.dellanadesigns.com

ImpressArt
ImpressArt
LOVE
Ergo-Angle™ handle provides optimal leverage for precision stamping
Replaceable weighted brass head

Imagery Icons

High Quality
Lost Wax Casting
Reasonable Pricing
Exceptional Service

We work closely with our clients for excellent results.

www.imageryicons.com
719-475-1782

Kingpin 88

Preset Metal Clay Programming for Ease and Accuracy

Door Options Including Window, Glass Bead & Standard

Angled Control for Comfortable Use

Evenheat Quality & Design

evenheat
www.evenheat-kiln.com

Evenheat Kiln, Inc. - Caseville Michigan 48725
evenheat-kiln.com - Phone: (989) 856-2281

Stretch your jewelry-making skills!

SUBSCRIBE TO
Art Jewelry magazine today!

http://Subscribe.ArtJewelryMag.com

quality + creativity

Tools designed to perform.
Stamps made to last.
Designs to spark your creativity.

**FREE** shipping
for orders over $50

CODE: shipAJ15 *Expires Aug. 5, 2015*
*(domestic orders only)*

Order online:
**theUrbanBeader.com**

or call: **888.578.2450**

the urban beader®
TOOLS • SUPPLIES

BEAD & BUTTON

In the
AUGUST ISSUE

YOUR COMPLETE BEADING RESOURCE

designed by Cary Bruner

Layer bugle beads for an elegant bracelet

Stitch a supple necklace with leaf fringe

Add texture to loomwork with multiple bead sizes

Subscribe today! 1-800-533-6644
Order online at www.BeadAndButton.com

LORTONE, inc

*Manufacturing Lapidary Equipment locally for over 50 years!*

Tumblers
Flat Laps
Trim Saws
Arbors
Slab Saws
Abrasives
Polishes

12130 Cyrus Way, Mukilteo, WA 98275 • Phone: (425) 493-1600 • Fax: (425) 493-9494
e-mail: equipment@lortone.com • www.lortone.com

CraftOptics® Telescopes

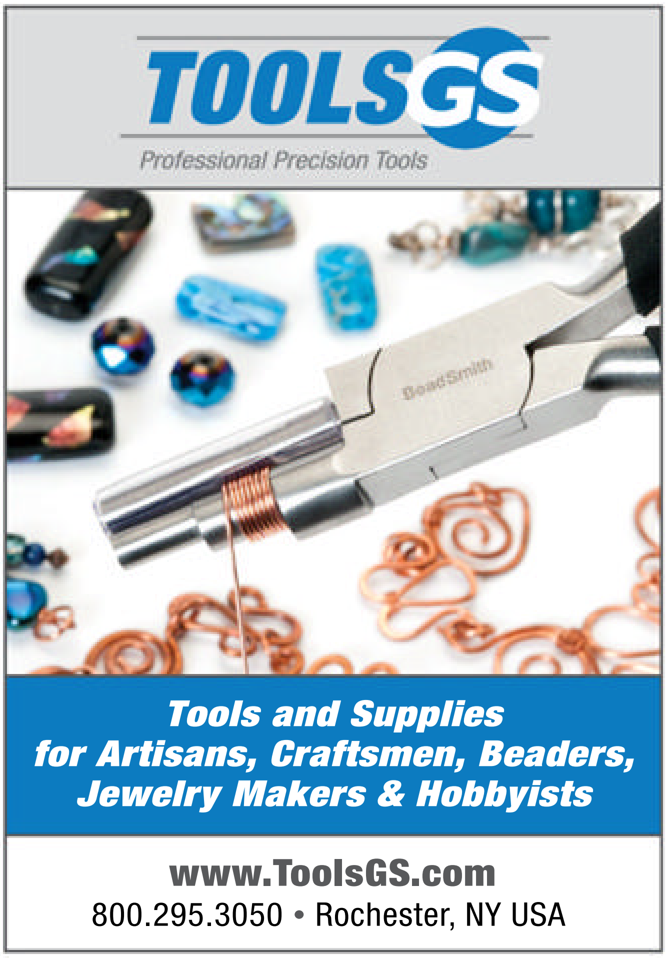
Magnify your talents®

I can see clearly now, the strain is gone...

Patented optics customized with your Rx

Jewelry Arts
Beadwork
Quilting
Needlepoint
Cross-Stitching
Sewing

Visit www.craftoptics.com or call 888.444.7728 to learn more!



TOOLSGS

Professional Precision Tools

Tools and Supplies for Artisans, Craftsmen, Beaders, Jewelry Makers & Hobbyists

www.ToolsGS.com
800.295.3050 • Rochester, NY USA

the BEADSMITH®

ULTRA THREAD ZAP thread burner

Support your local BEAD SHOP!

ASK FOR IT at a bead shop near you!

Compact design with retractable tip!

Heats instantly to trim, burn or melt thread • BONUS tip included!

BEAD SHOPS: To become a Beadsmith reseller, please contact us at 732.969.5300 or www.beadsmith.com

Requires two AAA batteries. (not included)

One-stop wholesale suppliers to bead stores worldwide for over 30 years! The BeadSmith is a proud distributor of these brands and more...

MIYUKI PRECIOSA CREATE YOUR STYLE with SWAROVSKI ELEMENTS Kumihimo braiding Soutache & Bead Embroidery SUPERDUO™ CZECH GLASS TWO HOLE SEED BEADS BY MATUBO

PandaHall.com
China Beads, Findings & Gems
Online Market

The Largest
Beads & Findings Kingdom
In the World

SHOP
OVER 400,000
BEADS & FINDINGS
ONLINE!

We are looking for professional jewelry designers to write quality guest blogs for us.
Please contact us at blog@pandahall.com.

No matter what medium you work in, there are some jewelry-making techniques that are so essential, you'll use them in nearly every project you make. These tutorials will walk you through the beginner techniques that you'll need to learn in order to make the projects in this issue.

**Look for this icon**
and find BONUS videos online at
**www.artjewelrymag.com/videos**.

# metalworking techniques

## DRILLING/PIERCING

Place your metal on a steel bench block or anvil. Use a center punch and a mallet to create a dimple where you want to drill a hole, or in the section of the metal you want to remove (for piercing) **[Figure 1]**. Place the metal on a piece of wood and drill a hole at the dimple **[Figure 2]**.

Remove one end of the saw blade from the saw frame. Slide the blade through the drilled hole, then reinsert the blade into the frame, and tighten it. Pierce the inside section of the metal. Release one end of the saw blade from the frame so you can remove the blade from the metal.

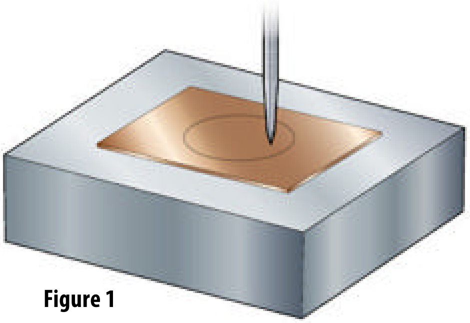


Figure 1

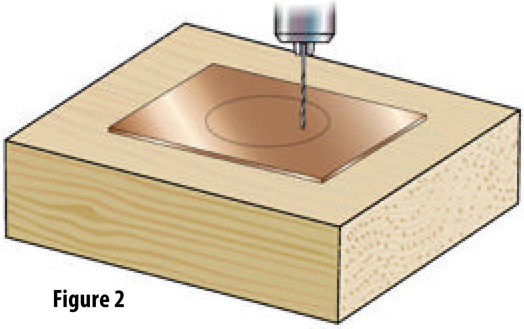


Figure 2

Download a free "Metal Piercing Chart" to help you select the best saw blade and drill bit size for your project. Visit **www.artjewelrymag.com/reference**.

## SAWING

Select a saw blade that is the correct size for the gauge (thickness) of metal that you are going to cut ▦.

To thread a saw blade, insert the blade with the teeth of the blade facing down and out, away from the frame, into the top wing nut of the saw frame. Tighten the wing nut. Brace the handle in the hollow of your shoulder, and apply pressure to the saw frame against your bench pin. Maintaining pressure, insert the bottom of the blade into the wing nut closest to the handle, and tighten the wing nut **[Figure 1]**.

The blade should be taut and should make a high-pitched "ping" sound when you pluck it with your thumbnail. If you get a dull "twang" instead, reinstall your blade while putting pressure on the saw frame. Then, lubricate the blade.

When sawing, maintain an erect sitting posture with the top of your workbench at upper chest level. Slouching or having your work too low causes back and wrist strain and leads to broken blades.

To saw, grip the saw frame loosely. Use long, smooth motions, using as much of the blade as possible. The blade will work best when it's perpendicular to the metal **[Figure 2]**. Putting excessive pressure on the saw frame will make you work harder. Turn corners by sawing in place while slowly turning the metal; trying to turn the saw will break the blade.

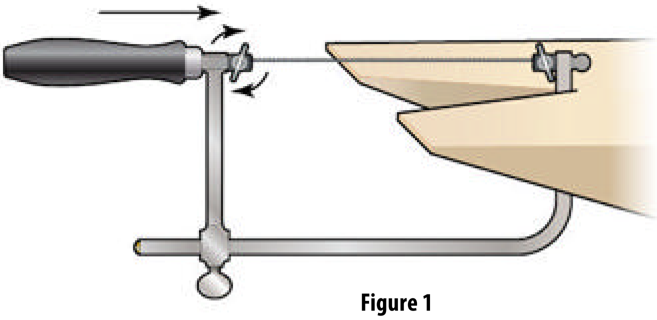


Figure 1

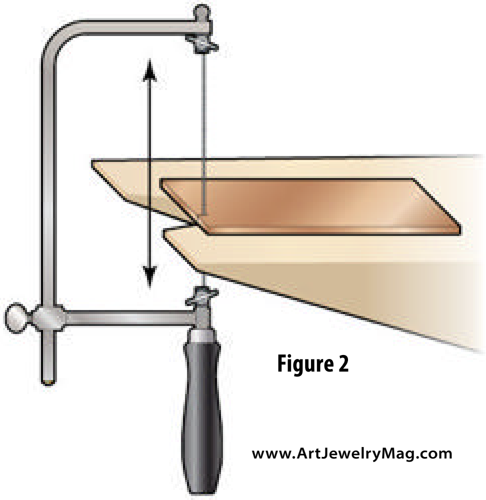
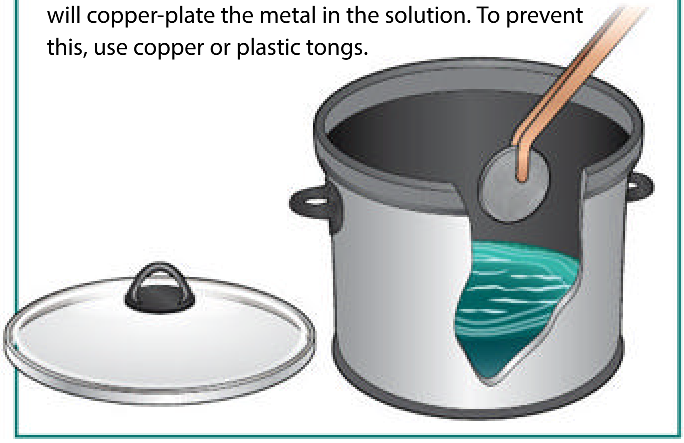


Figure 2

## PICKLE

Pickle is a mildly acidic solution that cleans oxides from metal by removing small amounts of copper. It's generally sold in powdered form, and is available from jewelry supply companies. To make a pickle solution, follow the manufacturer's instructions to mix the powder with water in a pickle pot dedicated to non-food use.

If steel (binding wire or tweezers) comes in contact with used pickle, it will cause a chemical reaction that will copper-plate the metal in the solution. To prevent this, use copper or plastic tongs.



## PATINATING WITH LIVER OF SULFUR

Polish your piece before patinating. (If you tumble-polish your piece after patinating, reserve the used shot for future patinated pieces, or scrub and rinse your shot and barrel thoroughly; liver of sulfur residue can contaminate other pieces.) Oil and dirt on the piece can affect the patina, so use a degreasing soap to clean the metal before patinating.

Prepare a liver of sulfur solution according to the manufacturer's instructions. Dip your metal in the solution with tweezers for a few seconds, then rinse the metal in cool water to stop the chemical reaction. For a darker patina, continue to dip and rinse the metal. Use a brass brush with soapy water, a polishing cloth, or pumice powder to remove or modify the patina. By using different temperatures and amounts of water to make the liver of sulfur solution, you can create different colors of patina; experiment until you achieve the desired color.

If you don't want your entire piece to have a patina, use a soft-bristle brush to apply the liver of sulfur solution to select areas. Dip your brush into the solution, and dab it onto your piece. Follow the same instructions as above until you achieve the desired color.

## SANDING

To give your metal the desired finish, smooth the surface and edges by sanding with progressively finer grits of sandpaper. Begin with a coarse grit (220–400) and work up to a fine grit (600–1000). Rub each grit of sandpaper back and forth in one direction. When you switch to the next finer grit, rub the sandpaper perpendicular to the marks from the previous grit until you can no longer see them.

## POLISHING METAL

To polish metal, you'll need a buffing machine or a flex shaft plus a separate buff for each kind of prepolishing and polishing compound that you use. Thoroughly clean your jewelry piece between polishing steps, and take care not to cross-contaminate your buffs and compounds; this could result in ruined buffs and scratches in your piece.

To prepolish, secure a soft cloth buff on the buffing machine, or insert a miniature buffing wheel in the flex shaft. To charge the buff, hold a stick of prepolishing compound, such as tripoli, against the spinning buff until the buff has a light coat of compound on its edge.

Press your jewelry piece against the charged buff, moving the jewelry piece continuously. Don't hold your piece against the spinning buff in one place for too long; you could end up wearing away material or creating scratches from the buff (called "drag marks"). Recharge the buff as needed.

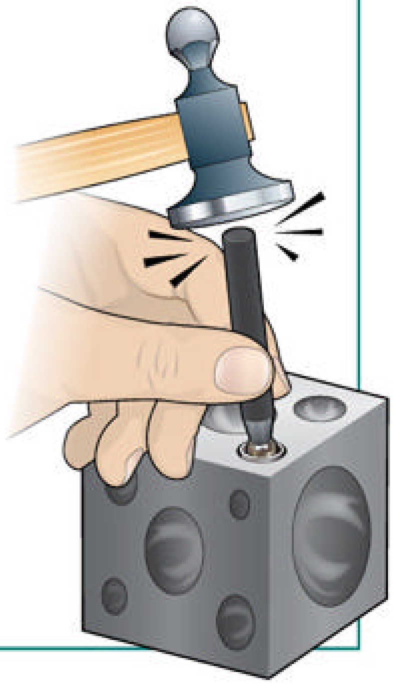
Clean your piece with dish soap and a soft toothbrush. If your piece is suitable, you could also clean it in an ultrasonic machine. Rinse and dry the piece.

To polish, charge a fresh buff with polishing compound, such as rouge. Polish your piece with the buff, recharging the buff as needed, until your piece is uniformly shiny and all evidence of prepolishing has been removed. Then, clean, rinse, and dry your piece.

## USING A DAPPING BLOCK

Place a disk of metal over the dapping depression it most closely matches in size. Choose a punch that is slightly smaller than the depression. Set the punch on the disk, and strike the punch with a chasing hammer or mallet until the metal sinks into the depression. Your first blow will make a shallow indentation; each successive blow will carry that indention inward toward the center of the disk.

When the metal conforms completely to the depression, move it to the next smaller depression in the block and switch to a smaller punch. Form the dome in stages until you have achieved the desired size and shape.



Subscribers, see everything in these toolboxes and get a free PDF at **www.artjewelrymag.com/reference**.

# toolboxes

## Finishing

- Brass brush
- Copper tongs
- Files: hand, needle
- Flex shaft or buffing wheel, buffs, polishing compound
- Liver of sulfur or other patina, lidded glass container
- Microcrystalline wax
- Polishing cloth
- Polishing papers
- Sandpaper: various grits
- Scouring pad
- Steel burnisher
- Steel wool
- Tumbler, steel shot, burnishing compound
- Ultrasonic cleaner

## Metal clay

- Acrylic or PVC roller
- Airtight storage container
- Brass brush
- Burnisher
- Clear, hard plastic sheet
- Craft knife
- Drinking straw
- Fine-tip paintbrush
- Flexible Teflon sheet
- Kiln, kiln shelf
- Mug warmer
- Needle files
- Needle tool
- Olive oil or natural hand balm
- Pin vise or holder, drill bits
- Plastic wrap
- Playing cards or thickness gauge
- Rubber block
- Shape cutters
- Smoothing tool
- Spatula or palette knife
- Syringe
- Texture sheets or molds
- Tissue blade: flexible, rigid, or wavy
- Tumbler, steel shot, burnishing compound
- Vermiculite, kiln-safe container
- Water: distilled
- Wet/dry sandpaper: various grits, or nail buff/ emery board

## Resin

- Clear packing tape
- Craft sticks
- Disposable plastic medicine cups (for mixing and measuring)
- Flex shaft, polishing buffs
- Latex or nitrile gloves
- Needle tool
- Respirator mask
- Sandpaper: various grits
- Syringe or bottle with syringe tip
- Toothpicks
- Tweezers

## Sawing/piercing

- Adhesive bandages
- Alligator tape (optional)
- Bench pin
- Center punch: manual or automatic
- Dividers
- Files: hand or needle
- Flex shaft, drill bits
- Jeweler's saw frame, saw blades
- Lubricant or beeswax
- Rubber cement or glue stick
- Safety glasses

## Soldering/Annealing

- Anti-flux
- Binding wire
- Borax (for borax solution)
- Copper tongs
- Fire-resistant surface: soldering pad, firebrick, or charcoal block
- Flux, flux brush
- Pickle pot with pickle
- Solder: hard, medium, easy
- Soldering pick
- Sparker: manual or automatic
- Third hand, insulated cross-locking tweezers
- Torch, various tips
- Sandpaper: various grits
- Tumbler, steel shot, burnishing compound

## Wirework

- Bench block or anvil
- Cutters: side, end, or flush
- Hammers: chasing, ball peen, cross peen
- Mallet: rawhide or plastic
- Mandrels or dowels
- Needle files
- Pliers: chainnose, flatnose, roundnose, parallel, nylon jaw
- Polishing cloth
- Sandpaper: various grits
- Tumbler, steel shot, burnishing compound

# safety basics

## Metals

- Wear eye protection at all times while working with metals, wire, and metalsmithing tools.
- Wear a non-flammable apron to protect your clothing.
- Tie back long hair.
- Work in a well-ventilated area at all times.
- Wear closed-toe shoes.
- Do not wear clothing or jewelry that might get caught in machinery or catch fire.

## All media

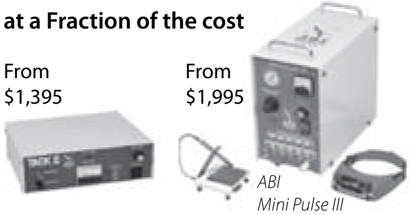
- Wear a dust mask while working with materials and tools that generate particulates.
- Read all Safety Data Sheets (SDSs) before using a new material, and keep a copy of the SDS for any material you use.
- Do not use tools or chemicals in ways that are contrary to the manufacturer's intended purpose.
- Wear protective gloves while handling caustic materials or chemicals.
- Keep a properly rated fire extinguisher and a source of clean water near your workstation.
- Keep cutting tools sharp and all tools and equipment properly maintained.

**ABI Precision Micro Welding**

The Laser Alternatives
at a Fraction of the cost

From
$1,395

From
$1,995

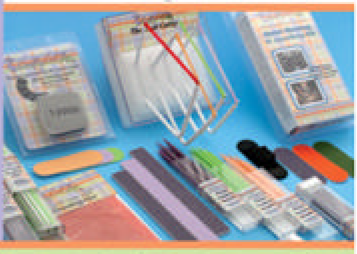


Tack • Spot • Fusion • Weld

**Aelectronics Bonding, Inc**
129 Robbins Creek Trail S.W. Calhoun, GA 30701
Phone/Fax: (706) 625-3798 • Toll Free: (888) 494-2663
www.abiusa.net • abi1655@aol.com

*Dealer inquiries welcome*

Crafty Cat



*Finishing specialties for the creative crafter*
**1-800-506-9618**
*www.alphaabrasives.com/craft-abrasives.php*

COME AND SHOP WITH US

Offering a large variety of products that
"Every Jeweler Needs"

CUSTOMER SATISFACTION
IS OUR PRIORITY!
Shipping around the world.

FOLLOW US ON
@waymil

Waymil
visit us
www.waymil.com

6352 NW 99 AVE DORAL, FL 33178 | 305-5998055 | INFO@WAYMIL.COM

We Get It.

We understand the value of craftsmanship. We know what it means to leave a piece of your heart in every item you make with your hands. We appreciate the spirit it takes to start a small business out of your home studio. We respect the determination you need to make it grow. We get it.

Halstead
WHOLESALE JEWELRY SUPPLIES SINCE 1973.

wholesale $100 min. | shop online now | halsteadbead.com

All you need...
...rock bottom prices.
WWW.
MONSTERSLAYER™
.COM

**Quality American made tools for jewelers**

- Hydraulic presses
- Lifetime Warranty on Press Frame
- Pancake Dies
- Jeweler's Saw
- Koil Kutter
- Silversmithing Stakes

We ship worldwide

**Potterusa.com**
sales@potterusa.com
520-777-6032
Tucson, Arizona

**NUNN DESIGN**

Quality Base Metal Jewelry Findings.
Visit our website for free tutorials and videos.
1-800-761-3557
MADE IN THE USA
www.nunndesign.com

**The Genie Gem-Maker**

Our most popular grinding and polishing unit features 6 inch wheels and our 7 step, all diamond, sequence.
(magnifier sold separately)

Contact us for more information or to request a free catalog.
e-mail: info@diamondpacific.com
Toll free: (800) 253-2954 Outside the US:(760) 255-1030
download our complete catalog at
www.diamondpacific.com

DIAMOND PACIFIC TOOL CORPORATION

Having the best tools makes all the difference!

Stainless Steel • Smooth • Balanced
Great for metal clays, polymer clay, epoxy clay, wax, and more!

www.ChristiFriesen.com
wholesale inquiries:
www.TheGreatCreate.com

**Lapidary Supplies & Equipment**

Authorized Dealers of: Crystalite, Lapcraft, Covington, Inland, MK Diamond, Raytech, Diamond Pacific, Euro Tool & many more.

www.arrowheadlapidarysupply.com
Email: info@arrowheadlapidarysupply.com
Order Toll Free (866) 929-8575
Fax (419) 929-2913

Arrowhead LAPIDARY & SUPPLY
P.O. BOX 247•Wellington OH 44090

Art Jewelry
DESIGN
CHALLENGE

January 2015 Honorable Mention
Theme: Rebirth
Winner: Nazir

*Show off your best work in Art Jewelry magazine's monthly design contest!*

To see this month's entries, find out the current theme, or enter your one-of-a-kind designs, visit **ArtJewelryMag.com/DesignChallenge**.

*Good luck!*

See all the past winners at ArtJewelryMag.com/DesignChallengeGallery.

P25550

Enjoy Instant Inspiration!

Access *Art Jewelry* magazine anytime, anywhere with the convenience of our digital edition!

Get Yours At
www.ArtJewelryMag.com/digitaleditions

Powered by Zinio™, digital editions are available on PC; Macintosh; Android™; iPad®; iPhone®; and Windows 8.

*Art Jewelry*'s digital edition is also available through the providers below:

Download on the App Store
GET IT ON Google play

kindle fire nook by Barnes & Noble kobo

Zinio is a registered trademark of Zinio, LLC. Android and Google Play are trademarks of Google Inc. Apple, the Apple logo, iPad and iPhone are trademarks of Apple Inc., registered in the United States and other countries. App Store is a service mark of Apple Inc. Barnes & Noble is a registered trademark of Barnes & Noble Booksellers, Inc. Nook and the Nook logo are registered trademarks of Barnesandnoble.com LLC. Amazon Kindle Fire is a trademark of Amazon.com, Inc., or its affiliates. Kobo is a trademark of Kobo Inc. Windows is a registered trademark of Microsoft Corporation in the United States and other countries.

P24085

BONUS POSTER!
Work by 10 superstar jewelry makers
10
ArtJewelry
MIX YOUR METALS IN ONE SEAMLESS SHEET
Fuse metal clay and Argentium sterling
Visit the master metal workers of West Africa
Step-by-step soldering chart
How to solder blackened steel
Learn to solder filled wire

## METAL CLAY AND WIRE FUSION

*page 28*

- Fine-silver wire, fine-silver bezels, PMC3, liver of sulfur or Black Max, burnisher, metal sealants, resin: Rio Grande, *below far right*
- Eyedropper, distilled water, plastic or glass container, lavender oil, mug warmer: Walgreens, www.walgreens.com
- Small paintbrush, heat lamp: Local art-supply store

## ADAPT TEXTILE WEAVING TECHNIQUES TO METAL

*page 32*

- Brass strip: Ace Hardware, www.acehardware.com, or local hobby store
- Jewelry screwdrivers: General Tools S605 five-blade jeweler's screwdriver set, local hardware store or online suppliers
- Screwdriver set: Stanley 66-052 six-piece set: Amazon, *far right*
- Pear-shaped wooden handle with chuck: Rio Grande, item number 113012, *far right*
- Upholstery needles: 4-pack of Dritz Home long hand needles, Amazon, *below right*; Jo-Ann Fabric and Craft Stores, www.joann.com
- Copper coupling: local hardware store
- Diamond disks: Rio Grande, *below right*
- Jett Sett thermoplastic compound: Cool Tools, www.cooltools.us
- Artist tape: ¼-and ½-in. (6.5 and 13 mm) widths, Dick Blick, www.dickblick.com

## EARRINGS: FOLD-OVER EARRINGS

*page 48*

- All materials, tools, and supplies: Grobet, www.grobetusa.com; Rio Grande, *right*; Otto Frei, 800.772.3456, www.ottofrei.com
- Stones cut by John Chickadel, Pike Creek Cabochons, jchick0609@verizon.net

## DIY DAPPING PUNCHES

*page 52*

- Pencil compass: local office supply store
- Dividers: local jewelry supplier
- Hacksaw, drill or other rotary tool, drill bits, wooden cabinet knobs, dowel screws, wooden dowels: local hardware store

*The jewelry designs in* Art Jewelry *are copyrighted. Please use them for your education and personal enjoyment. They may not be taught or sold without permission.*

## KILN CARE: HOW TO REPLACE A HEATING ELEMENT

*page 60*

- Replacement kiln element: your specific kiln manufacturer or kiln supplier

## TAKE A DECORATIVE APPROACH TO SAWING & FILING

*page 64*

- Chainsaw file, ⅛ in. (3 mm): hardware or home-improvement stores

28

**GENERAL SUPPLIERS**

- Amazon, www.amazon.com
- Rio Grande: 800.545.6566, www.riogrande.com

To download this page and a free shopping list for the July 2015 issue, visit **www.artjewelrymag.com/contacts-suppliers**.

ESSENTIAL TECHNIQUES
mixed media jewelry
Fibers • Resin • Clay Mixed metals and more!
42 INSPIRING projects
200 step-by-step photos
YOUR EASY GUIDE to making beautiful mixed media jewelry!

Expand Your Skills and Styles!

With 42 editor-tested projects, *Essential Techniques: Mixed Media Jewelry* helps you take your jewelry to a new level.

- **String and knot** fibers into fashionable necklaces.
- Hammer and patina metals into **custom components**.
- **Sculpt and texture** clay into bracelets.
- Make molds and colorize resin for earrings.
- Incorporate **found objects** into your designs.

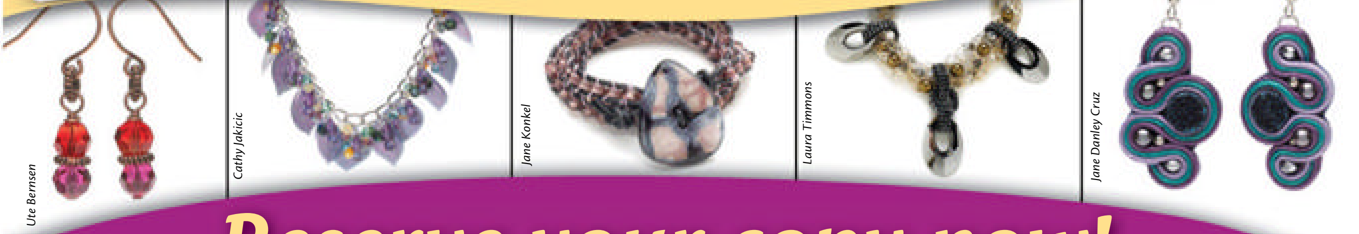
$1 Off + Free Shipping*

Reserve your copy now!

Order online at BeadStyleMag.com/MixedMedia

* Free standard shipping to U.S. addresses only.

P25196


Ute Bernsen Cathy Jakicic Jane Konkel Laura Timmons Jane Danley Cruz

## Website Directory

To advertise, please call
888-558-1544, ext.523

**beadFX**

Web store with more! Stone, Crystal, Glass, Pearls, Metals, Metal Clay. Everything you need (or want). Latest trends + all the classics. New stuff every week. Canadian. Free shipping Canada and US over $100.

**www.beadfx.com**

**Munro Wholesale Crafts**

Discounted pricing and large selection of beading and craft supplies. Swarovski Crystal, Polymer Clay, Artistic Wire, Czech Glass, Semi-Precious, Findings, Stringing Materials and more. See our website for discount information. We serve the world.

(248) 544-1590

**www.munrocrafts.com**

**Polymer Clay Express**

The world's largest and most innovative polymer clay store. Great selection, competitive prices, valued and knowledgeable staff. 1-800-844-0138
11am–6pm east coast time Mon–Fri

**www.polymerclayexpress.com**

## Marketplace

Product Development
Manufacturing
JEWELRYTHINGS.com

**PRECISION CASTINGS–MOLD MAKING–FINISHING**

35 years experience. We specialize in de-oxidized sterling silver alloy; no fire scale ever. Also work in gold, and red & yellow bronze. Finishing services available: cast only, tumble finish, mechanical finish, and complete hand finish.

888-552-5299 • www.ruidosometalworks.com

**GNW DESIGNS** Superior CAD designing, molding and casting

You concentrate on your jewelry designs, and we'll concentrate on getting them cast and to you

**800-485-1725**
**www.Gnwdesignsinc.com**

**Kentucky Guild Visual Arts Academy**
Berea, Kentucky
859-986-3192
TAKE A CLASS
www.kyguildacademy.com

**American Jewelers Institute**
Trade School for Bench Jewelers

**CAD Five day Jewelry Design class**
**Rhino 5.0 by McNeal & Assoc.**
**1-800-309-7540 Portland, Oregon**
**www.jewelersschool.org**
**e-mail: ajiinfo@comcast.net**

*Signature Leather*
for hand-made jewelry

**Genuine Cowhide ▪ Artisan Quality Greek Leather Cord**
tel: 508-481-6657 ▪ info@grecoleather.com
**grecoleather.com**

WARG Enamel & Tool Center

Jewelry, metalsmithing & enameling classes
– full service tools and supply –
Specialized chasing & matting tools

10 Oak Hill Plaza Scarborough Maine 04074
www.wargetc.com 207-885-9382

***Irish Waxed Linen Thread***
**Necklace Kits & Patterns**

***Supplies for:***
**Beading, FiberArts,**
**Basketweaving & Embellishing**

***Royalwood Ltd.***
517-AJ Woodville Rd.
Mansfield, Oh. 44907
800-526-1630
***www.RoyalwoodLtd.com***

**Your Jewelry Deserves a Beautiful Website**
Jewelspan provides everything you need to grow your online business. Sign up today, be online tonight.
**First Month is FREE.**

Jewelspan.com
Jeweler websites - Jewelry Marketplace

## advertiser index

Aelectronic Bonding, Inc. . . . . 76
Alpha Precision Abrasives, Inc. . . . . 76
American Jewelers Institute . . . . . 80
Arrowhead Lapidary & Supply LLC . . . . . 77
Art Jewelry magazine . . . . . 81
Art Jewelry magazine-Digital . . . . . 78
Art Jewelry Monthly Design Challenge . . . . . 78
Arttech Casting . . . . . 17
Bead&Button magazine . . . . . 70
BeadFX . . . . . 27, 80
Beadsmith . . . . . 71
Beaducation . . . . . 26
Bezel Form . . . . . 27
Billanti Casting Company, Inc. . . . . 22
■ **CONTENTI COMPANY . . . . . 83**
Cool Tools . . . . . 27
Covington Engineering Corp. . . . . 26
CraftOptics . . . . . 71
Diamond Pacific Tool . . . . . 77
Eastern Findings Corporation . . . . . 17
Essential Techniques: Mixed Media . . . . . 79
Evenheat Kiln, Inc. . . . . 70
■ **FIRE MOUNTAIN GEMS . . . . . 84**
Gem & Lapidary Wholesalers . . . . . 16
GNW Designs, Inc. . . . . 80
Great Create . . . . . 77
Greco . . . . . 80
Halstead . . . . . 76
Imagery Icons . . . . . 70
ImpressArt . . . . . 68, 69
JEC Products . . . . . 22
Jewelry Designer Manager . . . . . 27
Jewelrythings, Inc. . . . . 80
Jewelspan . . . . . 80
Jooltool By Anie . . . . . 23
Kentucky Guild of Artists . . . . . 80
Knew Concept . . . . . 17
Lillypilly Designs . . . . . 26
Lortone, Inc. . . . . 70
Minnesota Lapidary Supply Co. . . . . 26
Monsterslayer, Inc. . . . . 76
Munro Crafts . . . . . 80
Nechamkin Chasing Tools . . . . . 23
Now That's a Jig!/Brenda Schweder . . . . . 23
Nunn Design . . . . . 77
■ **OTTO FREI . . . . . 7**
■ **PANDAHALL.COM . . . . . 72**
Paragon Industries, Inc. . . . . 22
Pfingst & Co., Inc. . . . . 8
pmcsupply.com . . . . . 8
Polymer Clay Express . . . . . 80
Potter USA . . . . . 77
Reactive Metals Studio . . . . . 26
■ **RIO GRANDE, INC. . . . . 2**
Royalwood, Ltd. . . . . 80
Ruidoso Metal Works, Inc. . . . . 80
Santa Fe Jewelers Supply . . . . . 23
Speedbrite . . . . . 26
TOOLS GS . . . . . 71
Tronex Technology . . . . . 27
Tru-Square Metal Products, Inc. . . . . 22
Urban Beader, The . . . . . 70
Volcano Arts . . . . . 26
Warg Enamel & Tool Center . . . . . 80
Waymil International . . . . . 76
Weave Got Maille . . . . . 17
Wildwood Designs . . . . . 22
■ **WUBBERS . . . . . 3**
Xuron Corporation . . . . . 26

### classes & workshops section

Creative Side Jewelry Academy . . . . . 16
Drouhard Nat'l. Jewelers School . . . . . 16
Elentari Handverk . . . . . 16
■ **GEMOLOGICAL INST. OF AMERICA . . . . . 15**
John C. Campbell Folk School . . . . . 14
Mendocino Art Center . . . . . 14
Otto Frei . . . . . 14
Revere Academy of Jewelry Arts . . . . . 14
Silvera Jewelry Studios . . . . . 14
Studio JSD . . . . . 16
Taos School of Metalsmithing . . . . . 16
Terri McCarthy Studios LLC . . . . . 14
Texas Institute of Jewelry Technology . . . . . 16
William Holland School of Lapidary Arts . . . . . 16

■ **denotes full page ad**

The Advertiser Index is provided as a service to *Art Jewelry* magazine readers. The magazine is not responsible for omissions or for typographical errors in names or page numbers.

# Shop Directory

**SHOP DIRECTORY** ads are $235 for six consecutive issues, payable in advance, or $44 per issue (billed to established accounts for one year minimum). Color available for an additional $10 per issue. Street address must be listed in the ad. No mention of mail order or wholesale business permitted. Send your ad to: *Art Jewelry* Shop Directory, P.O. Box 1612, Waukesha, WI 53187-1612, or call 1-888-558-1544, Ext. 815

### ARIZONA • Phoenix & Scottsdale

Best selection of quality gemstones, Tierra Cast, seed beads, chain, metals, SS, GF, Swarovski, pearls, leather, jewelry making kits and more. Classes daily.

**www.beadworldinc.com**
**BEAD WORLD, INC.**
**6068 North 16th St. 602-240-BEAD (2323)**
**8764 E. Shea Blvd. 480-948-BEAD (2323)**

### CALIFORNIA • Concord

Beads to thread, wire & just admire
All for beading to your heart's desire
Family owned since 2003.

**www.justbeaditconcord.com**
**JUST BEAD IT!**
**2051 Harrison St., Ste. C 925-682-6493**

### FLORIDA • Orlando (College Park)

Bead Bar - Full Service Bead Stores - Since 1991, Bead Bar has offered the area's largest most diverse inventory of quality beads & supplies. Competitive pricing, outstanding customer service.

**www.beadbar.com**
**BEAD BAR® FULL SERVICE BEAD STORES**
**1319 Edgewater Drive 407-426-8826**

### FLORIDA • Orlando (Winter Park)

Jewelry tools, metals, displays and more for beaders, metalsmiths and jewelers. FDJ has the largest showroom in Florida with 18,000+ different items in stock. Classes and workshops are now available at FDJ's Firefly Studios.

**www.fdjtool.com**
**FDJ ON TIME, LLC 407-629-6906**
**1180 Solana Avenue 800-323-6091**

### ILLINOIS • Peoria

Central Illinois' oldest & largest full-service bead & artisan jewelry store. Best prices & largest selection in lampwork, crystal, firepolish, natural stone, sterling silver, pewter, copper, brass, etc. Lots of jewelry making kits and classes.

**www.pumpkinglass.com Junction City Shopping Ctr.**
**PUMPKIN GLASS**
**5901 N. Prospect Road., Ste. 4 309-966-3495**

### MICHIGAN • Berkley

Great prices & discounts. Large bead supply. Base metal, Sterling Silver & 14kgf findings and wire. Artistic, Beadalon and Beadsmith wire. Polymer and Art Clay and all the accessories. See our website for discount information. We serve the world.

**www.munrocrafts.com webmail@munrocrafts.com**
**MUNRO CRAFTS**
**3954 12 Mile Rd. 248-544-1590**

### MICHIGAN • Grand Haven

The largest bead store on the lakeshore offering an extensive selection of beading and jewelry-making supplies including metal clays, metalsmithing and lampworking supplies. Classes, parties & open workstations. Open daily.

**www.thecreativefringe.com**
**THE CREATIVE FRINGE**
**210 Washington Ave. 616-296-0020**

### MINNESOTA • St. Paul

Full range of tools & supplies for the wireworker & metalsmith. Sheet metal, wire, chain, metal clay & tools needed to work w/all of them. Indulge your muse by adding metal to your crafting skills. Mon-Fri 10-6, Sat 10-5 or by appt.

**www.beadstorm.com**
**STORMCLOUD TRADING (BEADSTORM)**
**725 Snelling Avenue North 651-645-0343**

### NEVADA • Henderson (Las Vegas area)

Serving the Las Vegas community with the largest variety of beads & findings. Classes, parties, volume discounts & workshops. Minutes from the strip.
For store hours check our website:

**www.beadjungle.com**
**BEAD JUNGLE 702-432-BEAD (2323)**
**1590 W. Horizon Ridge Pkwy. #160**

### OREGON • Bend (downtown)

More Beads Than You Can Imagine!
Open 7 days a week. Call for hours and directions.

**www.azillionbeads.net**
**AZILLION BEADS**
**910 NW Harriman St., #100 541-617-8854**

### TEXAS • Dallas

SERIOUSLY UNIQUE BEADS: Gemstone beads (inc. diamond, ruby, sapphire, opal), pearls, art-glass beads, seed beads, silver, vermeil, chain, wire, findings, tools, private lessons, classes. parties & more.

**www.beadingdreams.com**
**BEADING DREAMS**
**5629 W. Lovers Lane 214-366-1112**

### TEXAS • Pearland (South of Houston)

All your beading needs. Precious & semi-precious. Sterling Silver & gold-filled findings. Helpful, friendly instructors. Classes & birthday parties available. Special orders welcome.

**www.abcraftypeople.com**
**ANTIQUES BEADS & CRAFTY PEOPLE**
**2517 Broadway Street 281-997-3600**

### VIRGINIA • Annandale

Largest selection of beads and jewelry. Tribal & ethnic beads, jewelry, and findings. Wide variety of beads, pendants, bone, precious, gold, silver, metal, brass. Open 7 days/week 11-6. Also in Lake Forest Mall, Gaithersburg, MD, 301-990-1668

**tribalrugsjwlry@aol.com**
**TRIBAL RUGS & JEWELRY**
**7120 Little River Turnpike 703-642-8260**

### WASHINGTON • Tacoma

Jewelry tools and supplies, natural stones and handmade jewelry. Classes and workshops in metalsmithing, casting and PMC. Open studio rental available.
See website for more info:

**www.tacomametalarts.com**
**TACOMA METAL ARTS CENTER (TMAC)**
**3833 6th Ave. 253-227-1694**

### WISCONSIN • Brookfield

Specializing in beads and beading supplies, PMC-related products, metalsmithing tools & supplies, stone cabochons. PMC certification, wire work, stitching & specialty classes. Mon - Fri 10-8, Sat 10-5, Sun. 12-4.

**www.eclecticabeads.com**
**ECLECTICA**
**18900 W. Bluemound Rd. 262-641-0910**

### WISCONSIN • Brookfield

Create the jewelry you want to wear!
Limited Edition Designer Jewelry kits. Free assistance from our knowledgeable staff. Well lit design area to create in.
Mon-Fri 10-8, Sat 10-5, Sun 12-4.

**www.eclecticabeads.com**
**THE BEAD STUDIO**
**18900 W. Bluemound Rd. 262-641-0910**

### WISCONSIN • Sun Prairie (Madison)

Full-service bead shop. Featuring classes, large selection of beads, books, tools, etc. Specializing in PMC and semi-precious stones. Mon - Fri 10-8, Sat 10-5, Sun 12-4

**www.meant-to-bead.com**
**MEANT TO BEAD**
**1264 W. Main Street 608-837-5900**

### CANADA–ON • Toronto

Bead store with more! Everything you need, everything you want. Stone, Crystal, Glass, Pearls, all the Metals. Metal Clay & Silversmithing Classes - guest instructors. New products weekly. Latest trends & classics. Local lampwork & studio.

**www.beadfx.com**
**beadFX**
**19 Waterman Ave., Unit 2 877-473-2323**

Follow us on **Twitter**!
Go to www.Twitter.com/ArtJewelryMag
@ArtJewelryMag

Eva Sherman • September 2014

P25006

Find everything you need …

FREE PROJECTS

FREE E-NEWSLETTER

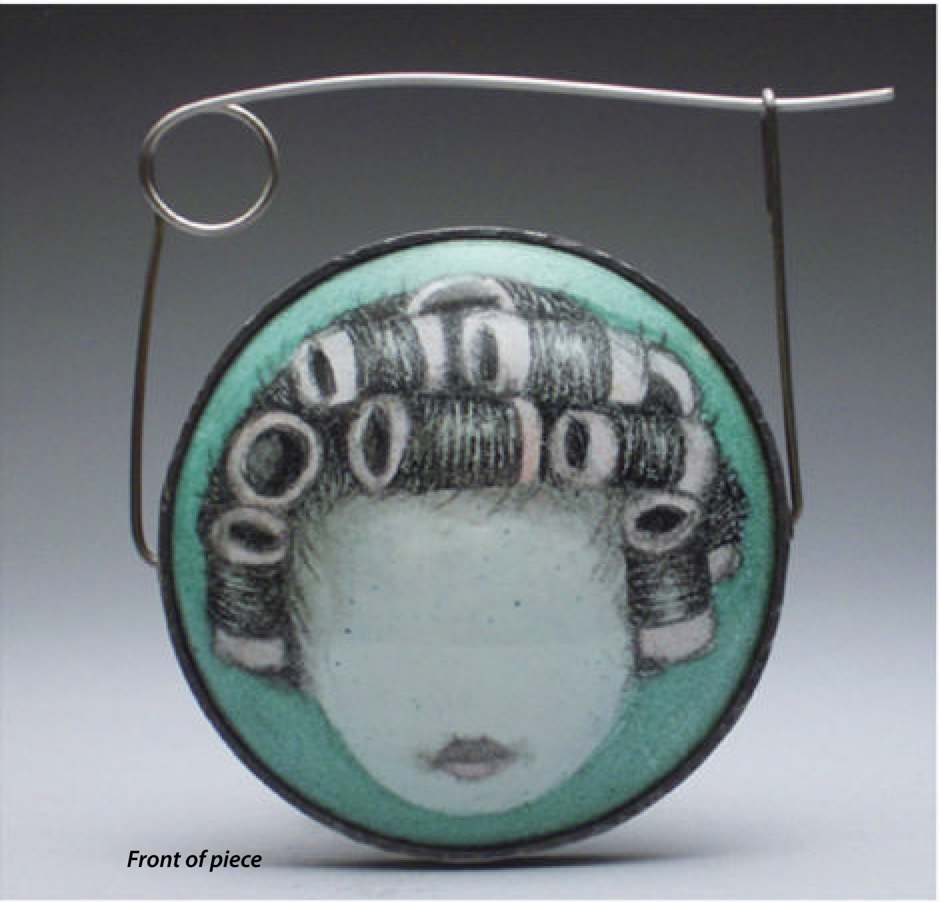
SHOP
BACK ISSUES & HUNDREDS OF PROJECTS

SUBSCRIPTIONS
PRINT OR DIGITAL — OR BOTH!

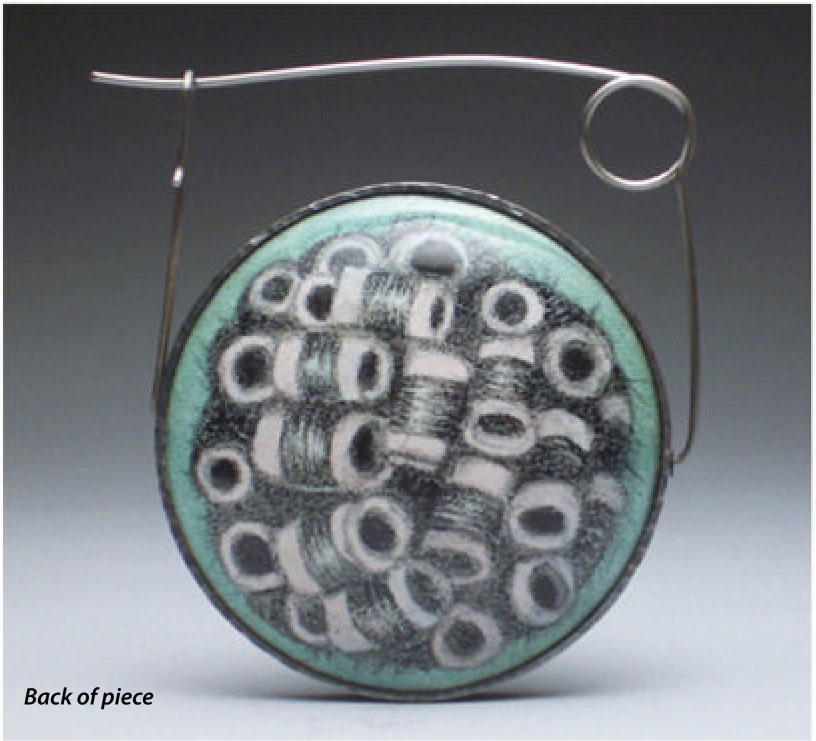
100+ HOW-TO VIDEOS

… at

ArtJewelry magazine



*Front of piece*



*Back of piece*

# Modern-day Portrait

Hair is a signifier of gender and societal norms, and can be a beautiful and compelling sculptural object in its own right. **Jessica Calderwood** is interested in hair and what it represents; to express her feelings on the subject, she created a series of "hair" pins. The double-sided, enameled brooches in this series can be flipped from one side to the other while being worn to show the secondary image. In this piece, *Pink Curlers*, the reverse of the pin reveals the back of the head with the hair set in foam curlers.

Calderwood draws inspiration from the technically superb and image-rich 18th-century enameled portrait miniatures. But, rather than render portraits of European aristocracy, she creates images and objects relevant to our time. Through research and her lived experiences, she has discovered that most women have a story about hair or hair curlers that is deeply personal, nostalgic, hilarious, and sometimes sad. She creates these pieces to inspire women to share those stories. —*Annie Pennington*

## AT A GLANCE

***Title:*** *Pink Curlers* (double-sided rotating brooch)
***Artist:*** Jessica Calderwood
***Info:*** Limoges enamel on copper, sterling silver, and stainless steel; 3 x 2½ x ¼ in. (76 x 64 x 6.5 mm)
***Contact:*** www.jessicacalderwood.com; jc1010@hotmail.com

Photos by Jessica Calderwood.

# Contenti

*The Widest Selection of Jewelry Tools Online*

www.contenti.com

**A** DURSTON ROLLING MILLS Known throughout the world for their reliability, robust construction, high quality, and fine finish. Contenti has the full range of Durston manual rolling mills, 20 different models in all, including the Double Rolling Mills. **B** MINIATURE SMITHING HAMMERS Choose from among 10 styles, all of which are scaled-down versions of silversmith's hammers. All are 8 $^{3}/_{4}$" long approximately and have handles fashioned from rosewood. **C** DAPPING TOOL SET [Item 190-242] Includes 49mm (1 $^{7}/_{8}$") dapping block and 24 punches, 2.3mm to 25mm in diameter. The depressions on the Die range in diameter from 3.8mm to 40mm. Provided with wood stand. **D** ECONOMY FLEXSHAFT MACHINE [Item 236-971] With its powerful $^{1}/_{8}$ HP motor and spring-reinforced sheath, our Economy Flexshaft is an outstanding value. The 1" diameter No. 30-style handpiece is equipped with a Jacobs-style chuck that accepts any bur, drill bit, or rotary tool with a shank up to $^{5}/_{32}$" diameter. Operates at speeds up to 22,000 RPM, regulated by a carbon resistance foot rheostat. Shaft connection accepts any American-style (QD connection) handpiece. Furnished with fitted carrying case. **E** PEPE JUMP RING MAKER [Item 400-124] Produce jump rings quickly and easily with the newly redesigned Jump Ring Maker. Coil your wire around one of the twenty mandrels (diameters range from 2.5 to 12 mm) using the hand-winder. Once the coil is formed, place it in the adjustable coil holder and saw through it using the included rotary saw and handpiece guide. It's that easy! *Flexshaft machine with a no. 30 style handpiece required (sold separately).* **F** NECKLACE MANDREL [Item 320-643] Hammer, shape, and form necklaces on this chrome-plated cast iron mandrel. Value-priced. **G** ECONOMY ROLLING MILL [Item 190-891] Surprisingly affordable, this mill is equipped with two 43 mm dia. flat, hardened steel rolls and two wire rolls, all 76 mm wide. Wire rolls have grooves from .75 to 4.3 mm wide. Has 4:1 gear reduction for easier operation. Includes a 1 year warranty. **H** JEWELER'S WORKBENCH (UPS Shippable) [Item 110-234] Hand-crafted from solid woods for durability and strength. Railing on 3 sides. Equipped with metal-lined pull-out tray, pull-out tool shelf with 2 levels, 3 storage drawers, bench pin, and 2 arm rests. 39" wide x 19.5" deep x 39" high. UPS Shippable.

**The Contenti Company**
515 Narragansett Park Drive
Pawtucket RI 02861 USA
Tel: 800-343-3364 / 401-305-3000
Fax: 800-651-1887 / 401-305-3005

*Visit us online at*
www.contenti.com

See the Full Line of
PMC Metal Clay Products Online
www.firemountaingems.com

FIRE MOUNTAIN
GEMS and Beads®
"Friendly Service" Since 1973

www.firemountaingems.com

One Fire Mountain Way, DEPT C026
Grants Pass, OR 97526-2373 1-800-355-2137

**America's Favorite Beading and Jewelry Supply Company®**

**Go online to see over 120,000 HOT jewelry-making products and order a Free catalog today**

You supply the creativity, we supply everything else!®

Karen Anderson, CO
www.kejadesigns.com
Finalist, 2014 Metals
Jewelry-Making
Contest

Fire Mountain Gems
and Beads© 2015